

Draft of January 7, 1999

DRAFT
RESTORATION PLAN AND
ENVIRONMENTAL ASSESSMENT
FOR
THE *TENYO MARU* OIL SPILL

Prepared by:

The *Tenyo Maru* Oil Spill Natural Resource Trustees

Makah Indian Tribe

State of Washington

Department of Ecology (WDOE)

Department of Fish and Wildlife (WDFW)

Department of Natural Resources (DNR)

U.S. Department of Commerce

National Oceanic and Atmospheric Administration (NOAA)

U.S. Department of the Interior

Fish and Wildlife Service (FWS)

National Park Service (NPS)

Bureau of Indian Affairs (BIA)

PUBLIC REVIEW DRAFT

January 7, 1999

INFORMATION SHEET

**DRAFT Restoration Plan and Environmental Assessment
for the July 22 1991, *Tenyo Maru* Oil Spill**

Cooperating Agencies: Makah Indian Tribe; U.S. Department of Commerce represented by the National Oceanic & Atmospheric Administration; the U.S. Department of the Interior represented by the National Park Service and the U.S. Fish and Wildlife Service, and; the State of Washington represented by the Department of Ecology, Department of Fish and Wildlife, and Department of Natural Resources

Supplementary Information: This Draft Restoration Plan and Environmental Assessment (DRP/EA) has been prepared by the Tribal, State, and Federal Natural Resource Trustees to address restoration of natural resources injured by the July 22, 1991 oil spill that resulted from a collision between the Japanese fishing vessel *Tenyo Maru* and Chinese freighter *Tuo Hai* 20 miles northwest of Cape Flattery off the Washington coast. Beaches were oiled from Vancouver, British Columbia to northern Oregon. Numerous seabirds were killed and substantial amounts of oil were observed in kelp beds. Proposed restoration efforts in the DRP/EA include the combination of protection and enhancement activities that have the greatest potential to restore the injured natural resources, with particular emphasis on seabirds.

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Comments: Comments on the draft Plan are due no later than April 1, 1999. Comments should be sent to the above address.

Administrative Record: The documents comprising the Administrative Record can be viewed at the above public location.

Copies: Copies of the DRAFT Restoration Plan and Environmental Assessment for the *Tenyo Maru* Oil Spill are available from the address listed above and are available for download at the following web site: <http://www.r1.fws.gov>.

Executive Summary

On July 22, 1991 the Japanese fishing vessel *Tenyo Maru* and Chinese freighter *Tuo Hai* collided within Canadian Territorial waters approximately 20 miles northwest of Cape Flattery. The *Tenyo Maru*, which was reportedly carrying 354,800 gallons of intermediate fuel oil, 97,800 gallons of diesel fuel, and 22,500 gallons of fish oil, sank at collision. It initially leaked a large amount of oil and undetermined amounts were reported leaking for more than a month after the collision. Beaches were fouled with oil from Vancouver Island, British Columbia to northern Oregon. While impacts were scattered along the entire Washington State shoreline and the northern beaches of Oregon, the heaviest oiling occurred along the Makah Indian Reservation and the Olympic National Park shoreline. The Natural Resource Trustees estimated that 3,740- 19,559 common murre (*Uria aalge*) and 161-273 (7-11 % of the total outer coast population) federally threatened marbled murrelets (*Brachyramphus marmoratus*) were killed, in addition to substantial numbers of rhinoceros auklet (*Cerorhinca monocerata*), tufted puffin (*Fratercula cirrhata*), Cassin's Auklet (*Ptychoramphus aleuticus*) and pigeon guillemot (*Cepphus columba*). Substantial amounts of oil were observed in many of the giant kelp (*Macrocystis*) and bull kelp (*Nereocystis*) dominated kelp beds from Cape Alava north to Tatoosh Island and from Tatoosh Island east to Waadah Island. Laboratory studies indicate that oil from the *Tenyo Maru* may have injured the kelp. (Tenyo Maru Trustees 1993, Battelle Marine Sciences Laboratory 1992)

Claims for natural resource damages were settled by consent decree under the Oil Pollution Act of 1990 (OPA), 33 U.S.C. § 2701 *et seq.*. Under the consent decree the defendants agreed to pay approximately \$5.2 million to restore, rehabilitate, replace or acquire the equivalent of natural resources injured by the oil discharge. This Draft Restoration Plan and Environmental Assessment (DRP/EA) is presented to the public by the Natural Resource Trustees (Trustees) responsible for restoration implementation under the consent decree. The **DRP/EA** describes the affected environment and illustrates potential restoration alternatives and their environmental consequences. The Trustees have selected an integrative restoration approach as their preferred alternative to restore, rehabilitate, replace, or acquire the equivalent of natural resources injured in the *Tenyo Maru* oil spill.

The Trustees present this **DRP/EA** to the public and encourage written comments from interested citizens, organizations and governments. The final **RP/EA** will be prepared and released to the public following an evaluation of all comments received from this draft Plan.

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LIST OF ACRONYMS

BIA - Bureau of Indian Affairs
CEQ - Council on Environmental Quality
CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act
CFR- Code of Federal Regulations
DOC - Department of Commerce
DOI- Department of the Interior
DOM - dissolved organic matter
DRP - draft Restoration Plan
EA - Environmental Assessment
EIS - Environmental Impact Statement
ESA - Endangered Species Act
FAA - Federal Aviation Administration
FWS- U.S. Fish and Wildlife Service
MOA - Memorandum of Agreement
MRI - magnetic resonance imaging
NPS - National Park Service
NEPA - National Environmental Policy Act
NMFS - National Marine Fisheries Service
NOAA- National Oceanic and Atmospheric Administration
NRDA - Natural Resource Damage Assessment
NWR - National Wildlife Refuge
OCNMS - Olympic Coast National Marine Sanctuary
ONP - Olympic National Park
OPA- Oil Pollution Act of 1990
Plan - Restoration Plan
RFP - Request for Proposals
RP - Restoration Plan
Sanctuary - Olympic Coast National Marine Sanctuary
SEPA - Washington State Environmental Policy Act
SOAL - State owned aquatic lands
WAC - Washington Administrative Code
WDFW - Washington State Department of Fish and Wildlife
WDNR - Washington Department of Natural Resources
WDOE- Washington State Department of Ecology
WSP - Washington State Parks
UNESCO - United Nations Educational Scientific and Cultural Organization
YOY - young of year

1.0 INTRODUCTION

1.1 Purpose and Need for Proposed Action

The purpose of this Draft Restoration Plan and Environmental Assessment (DRP/EA) is to design, coordinate, and implement projects that restore, rehabilitate, replace and/or acquire the equivalent of natural resources injured from the discharge of oil by the *Tenyo Maru* on July 22, 1991. This document has been prepared on behalf of the public by the Natural Resource Trustees (Trustees) responsible for restoration implementation under a consent decree. The **DRP/EA** describes the affected environment and illustrates potential restoration alternatives and their environmental consequences. This **DRP/EA** is being developed in accordance with the Oil Pollution Act of 1990 (OPA), 33 U.S.C. 2706(b), the National Environmental Policy Act (NEPA), 42 USC 4321-4370d, and its implementing regulations, 40 CFR Parts 1500-1508, and the Washington State Environmental Policy Act (SEPA).

1.2 Incident Background

On July 22, 1991, the Japanese fishing vessel *Tenyo Maru* and Chinese freighter *Tuo Hai* collided within Canadian Territorial waters in heavy fog approximately 20 miles northwest of Cape Flattery. The *Tenyo Maru* sank at the point of collision in 90 fathoms of water. It was reportedly carrying 354,800 gallons of intermediate fuel oil, 97,800 gallons of diesel fuel, and 22,500 gallons of fish oil. (Tenyo Maru Oil Spill Trustees 1993)

The vessel initially leaked a large amount of oil. For more than a month **after** the collision, an undetermined quantity of oil leaked from the sunken vessel, and fouled beaches from Vancouver Island, British Columbia to northern Oregon (Fig. 1-1). The heaviest oiling occurred along the Makah Indian Reservation and the Olympic National Park shoreline. Impacts were scattered along the entire Washington State shoreline and the northern beaches of Oregon.

In December 1994, the Trustees and defendants for the 1991 *Tenyo Maru* oil spill entered into a consent decree¹. Under the consent decree, the defendants agreed to pay to a federal court-held restoration fund approximately \$5.2 million to restore, replace, rehabilitate, or acquire the

¹ United States et al. v. Maruha Corporation et al, Civil No. C94-1537 (W.D. Wash., Dec. 23, 1994).

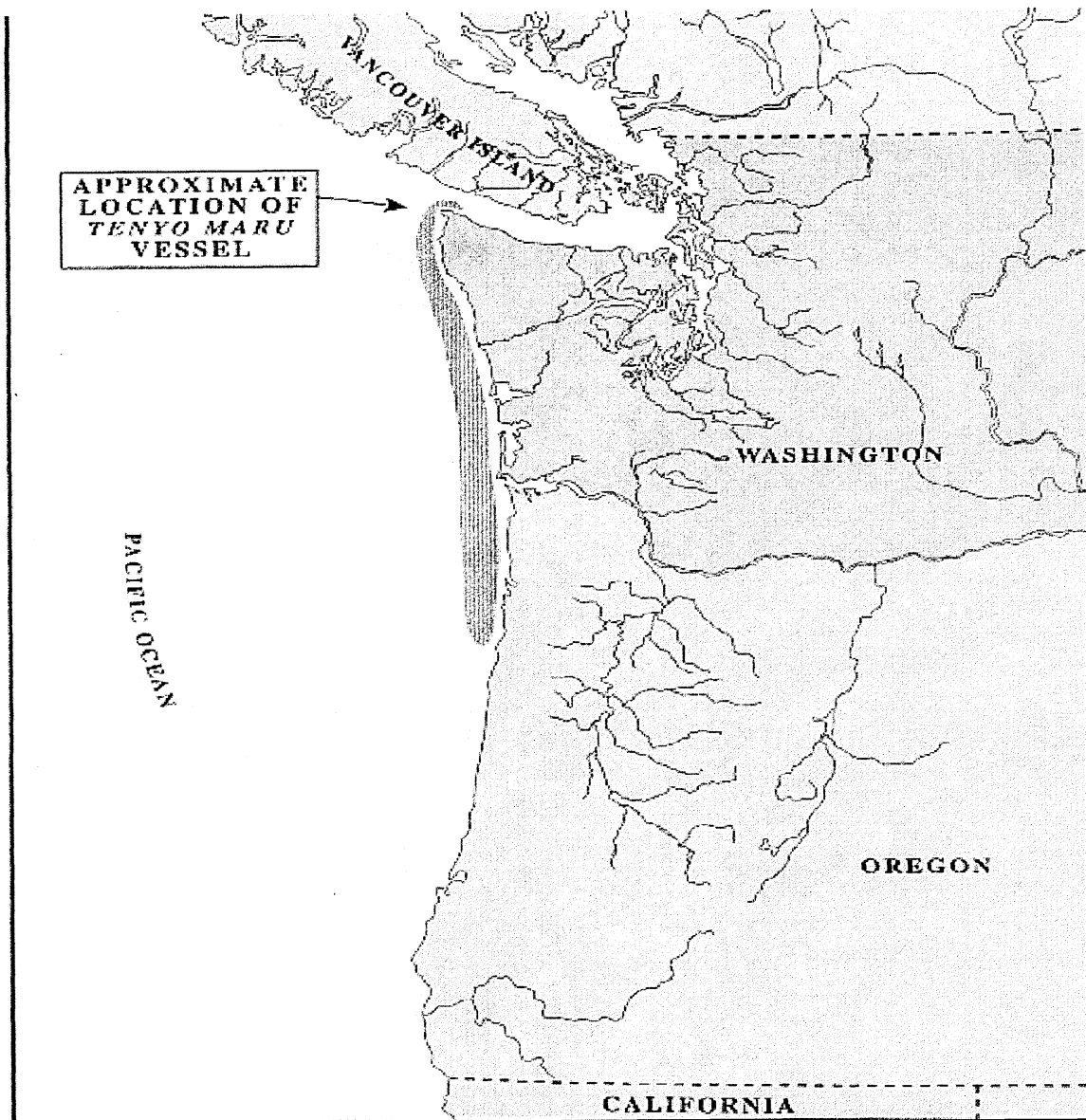


Figure 1-1. Approximate area impacted by *Tenyo Maru* Oil Spill

equivalent of natural resources injured as a result of the spill.

Restoration **funds** were recovered under the Oil Pollution Act of 1990 (33 USC sec. 270 1 et seq.) and the State's Water Pollution Control Act (90.4856 RCW). Guidance applicable to restoration, replacement, or acquisition of equivalent resources and services is contained in 15 CFR Part 990, Department of Commerce, and 43 CFR Subtitle A, Part 11 of the Department of Interior (DOI) natural resource damage assessment (NRDA) regulations. According to the consent decree, a restoration plan must be adopted and a mechanism for its implementation must be in place before expenditure of funds. A Trustee Committee was formed by a Memorandum of Agreement (MOA), consisting of the Makah Indian Tribe, the State of Washington (Dept. of Ecology, Dept. of Fish and Wildlife, and Dept. of Natural Resources), the Department of Commerce (National Oceanic and Atmospheric Administration [NOAA]) and, the Department of the Interior (U.S. Fish and Wildlife Service, National Park Service, and the Bureau of Indian Affairs). The objective for the *Tenyo Maru* Trustee Committee is to plan and design, coordinate and implement projects that restore, rehabilitate, replace and/or acquire the equivalent of natural resources injured by the *Tenyo Maru* oil spill.

1.3 Fish and Wildlife Resources and Natural Resource Injury

Spill-related natural resource injuries were documented primarily for marine birds, and secondarily for kelp (*Macrocystis* and *Nereocystis*) (Tenyo Maru Oil Spill Trustees 1993). Of the 740 oiled birds rescued alive, 97 (13%) survived rehabilitation and were released. Their ultimate fate is unknown. A total of 4,300 bird carcasses was recovered during search and rescue efforts (Table 1-1). However, this number is a minimum estimate for total **seabird** mortality because many carcasses may have sunk, been scavenged, or were not found by rescue workers. Thirty bird species were identified from birds recovered from the spill.

Approximately 93% of the total number of birds recovered were from species known commonly to breed in Washington State (15 species). However, not all of these birds necessarily were Washington breeders or were hatched in Washington. For example, Warheit (1996) estimated that between 39% and 58% of the adult common murres (*Uria aalge*) killed by the spill in Washington were from Washington, and the remaining adult common murres were from Oregon.

Models have been developed to extrapolate total **seabird** mortality from carcass counts. These models use the at-sea abundance and distribution of the seabirds; spill trajectories; and probabilities that birds will become oiled, that a particular carcass will be scavenged after reaching shore, and that an unscavenged carcass will be found by rescue workers (see Page et al. 1990, Ford et al. 1996). Because only at-sea **seabird** distribution information and spill trajectory

Table I-1. Bird species with mortalities associated with the *Tenyo Maru* oil spill.

Species	# Oiled Birds	Breeding Population Estimates		Source ¹
	Retrieved	Statewide	Outer coast	
Common Loon	1	rare		
Red-throated Loon	1			
Western Grebe	2	rare		
Black-footed Albatross	11			
Northern Fulmar	67			
Sooty Shearwater	49			
Short-tailed Shearwater	5			
Unidentified Shearwater	1			
Fork-tailed Storm-petrel	1	3,878	3,878	(a)
Leach's Storm-petrel	1	35,700	35,700	(a)
Unidentified Storm-petrel	1			
Double-crested Cormorant	5	6,472 ²	(b)	
Brandt's Cormorant	10	700	700	(b)
Pelagic Cormorant	18	6,134	4,800	(b)
Unidentified Cormorant	12			
Surf Scoter	10			
White-winged Scoter	41			
Bufflehead	1	rare		
Black Turnstone	1			
Mew Gull	4			
California Gull	a7	>500		
Western/Gl.-winged Gull	91	36,923	36,923	(a)
Unidentified Gull	39			
Caspian Tern	25	7,918	?	(a)
Arctic Tern	1	rare		
Common Murre	3,157	13,600 ³	13,600 ³	(e) (f)
Pigeon Guillemot	33	4,270	4,270	(a)
Marbled Murrelet	45	5,000	2,400 ⁴	(c) (d)
Cassin's Auklet	116	45,375 ⁵	45,375 ⁵	(b)
Rhinoceros Auklet	281	55,662	27,872	(b)
Horned Puffin	1			
Tufted Puffin	127	5,612 ⁵	5,582 ⁵	(b)
Crow spp.	1	common	common	
Unidentified bird	54			
Total	4,300			

¹ Source for population estimates: (a) Speich & Wahl (1989); (b) Ulrich Wilson, pers. comm (1996); (c) Speich et al. (1992); (d) Speich & Wahl (1995); (e) Wilson (1995); (f) Parrish (1996a)

² Statewide estimate for *marine* population

³ Population estimate based on Wilson (1995) attendance data for murre nesting within FWS refuges (1995 median = 5,230) & Parrish (1996a) attendance data for murre nesting on Tatoosh Island in 1995 (3,270). Attendance total was multiplied by 1.6 to estimate breeding population.

⁴ Speich et al (1992) estimated *total* population (adults, subadults, and juveniles) for outer coast

⁵ Population estimates based, in part, on burrow counts and percent occupancy for those burrows on Carroll and Alexander Islands, and Cake Rock. Data collected in 1980's.

data are available for the *Tenyo Maru* spill, there are no data to calculate the probabilities that a carcass washed ashore, was scavenged, or was recovered.

The Trustees identified and documented **3,157** common murres killed by the oil spill, which is a minimum estimate of actual mortality. The median attendance at common murre breeding colonies in Washington in **1991, 1995, 1996**, and 1997 was roughly 7,700; 8,500; 6,738; 3,810 birds, respectively (Wilson 1995, Parrish 1996a, Wilson 1997). Therefore, a potentially sizable proportion of the total Washington state common murre population (includes breeding and nonbreeding adult, sub-adult, and juvenile birds) may have been killed by the *Tenyo Maru* oil spill.

The federally threatened marbled murrelet (*Brachyramphus marmoratus*) population in Washington was also impacted by the *Tenyo Maru* spill. Forty-five known murrelet mortalities were observed and documented from the spill. Approximately 70% of birds of known age were juveniles, and 62% of known sex were females (Warheit 1996). As with common murres, this spill may have affected a sizable proportion of marbled murrelets nesting in Washington.

Similar to many other oil spills in the north temperate to subarctic waters the Alcidae (murres, puffins, and their allies) comprised the highest percentage of known mortality (87%) from the *Tenyo Maru* oil spill. Besides common murres and marbled murrelets, substantial numbers of rhinoceros auklets (*Cerorhinca moncerata*), tufted puffins (*Fratercula cirrhata*), Cassin's Auklet (*Ptychoramphus aleuticus*) and pigeon guillemots (*Cephus columba*) carcasses were recovered from the spill, with estimated total mortality for these species possibly ranging into several hundred individual birds per species.

Known mortality of rhinoceros auklets was second only to common murres; however, the statewide breeding population for this species may be among the largest for all seabirds in Washington, and the effects from the oil spill at the population level are unclear. The estimated breeding population of rhinoceros auklets within the spill zone is about half its total statewide population (27,872 and 55,662 birds, respectively), and if the *Tenyo Maru* oil spill affected only this portion of the population, upwards of 2% of that portion may have been killed. Tufted puffin mortality was nearly as high as or higher than that of rhinoceros auklets. However, this mortality may have totaled 9% of the tufted puffin's statewide population (5,582 birds) making the effects of this spill on this species considerably greater than the effects on the rhinoceros auklet population.

Oil lingered in giant kelp (*Macrocystis*) and bull kelp (*Nereocystis*) dominated kelp beds from Cape Alava north to Tatoosh Island and from Tatoosh Island east to Waadah Island, for up to two weeks following the spill. During the natural resource damage assessment process, laboratory and mesocosm studies conducted by Battelle's Pacific Northwest Marine Sciences Laboratory showed that samples of weathered and unweathered Bunker C, diesel, and crude oils can be toxic to *Nereocystis* kelp by affecting blade growth and physiological functions. (Antrim et al. 1995)

Quantification of injuries to fish, shellfish, and the fisheries resources, including injury to fishery associated habitats, were not pursued as part of the damage assessment process. Therefore, little data were collected that would either defend or **refute** assertions of injury to fisheries. Injury to human scale organisms (those visible by unaided sight) inhabiting the intertidal zone were not observed to be sufficient to trigger efforts to quantify injuries. An oiled and dead harbor seal pup and a sea otter were found. **Woodbury and Deither (1991:7)** stated that the oil that washed ashore along Washington coastal beaches “affected only the high and very high intertidal or supra littoral zone which is relatively depauperate. The areas of direct impact were patchy, and no devastating destruction or mass mortality was observed [and] intertidal areas surveyed in August [1991] and resurveyed September [199 1] showed no gross community change.” **Again, results from initial surveys did not indicate further studies were feasible.**

1.4 Public Involvement and Plan Implementation

Public involvement is required in the development of a restoration plan. Toward this end, the Trustee Committee has made, and will continue to make, opportunities available for the public to participate in the restoration planning process.

As part of the development of this restoration planning process, a scoping document was prepared and released in November **1995**. The scoping document contained information describing the incident and injured natural resources, restoration criteria, and possible restoration actions. The public was invited to review and provide recommendations to be considered during the restoration planning process. Two public meetings were held to give the public an early opportunity to engage in discussions regarding the preparation of the restoration plan. Meetings were held in Port Angeles and Seattle, Washington in November 1995. The Trustee Committee responded directly to the Scoping questions and comments from the public. See Appendix A for a summary of oral and written comments.

This **DRP/EA** will be provided to the public for a minimum of a 60-day review and comment period. Notices regarding the availability of the draft document will be published locally, and copies of the draft document will be sent to interested members of the public, agencies, organizations and public representatives. A public information meeting addressing the **DRP/EA** will also be held during the public comment period. A summary of all public comments to the proposed plan and a responsiveness summary will be provided in the final Plan and will be part of the Administrative Record. The final **EA/RP** will be prepared and released to the public following an evaluation of all comments received from this draft Plan. Public review of the **DRP/EA** is consistent with all federal and state laws and regulations that apply to the OPA and NEPA processes.

The Trustee Committee intends to review the restoration plan annually and evaluate the success of the projects being carried out by comparing results with stated goals of each restoration project. Reviews will focus on determining the efficacy of, and suggestions for, improving the selected activities as well as determining that the restoration projects minimize, avoid, or compensate for any potential environmental impacts which may arise during the project

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implementation. Major revisions to the **final EA/RP** will be subject to public review.

2.0 AFFECTED ENVIRONMENT AND NATURAL RESOURCES OF CONCERN

This section describes the restoration area and identifies natural resources of concern that could be affected by the Plan. It provides a discussion of the current conditions that will be used as a comparison with conditions after restoration activities have been implemented. The primary restoration area refers to the geographic area primarily impacted by the spill (Fig. I-1). The expanded restoration area refers to a larger area that has a biological connection to the primary area through an injured species or the food web to which it is a part. The primary and expanded restoration area extends from Waadah Island in the Strait of Juan de Fuca, down the outer Washington and Oregon coasts to the **Winchuck** River. Watersheds leading into the Washington marine waters within the primary restoration area are included. Because of the biological link to birds killed from the oil spill and the importance of **seabird** colonies, Protection Island National Wildlife Refuge (NWR), Smith Island and San Juan Island areas have been included in the expanded restoration area.

2.1 Affected Environment

2.1.1 Land Ownership

Makah Indian Reservation

The Makah Indian reservation is located on the northwestern tip of the Olympic Peninsula in Clallam County, Washington. The total land area of 47 square miles is bounded on the west by the Pacific Ocean and on the north by the Strait of Juan de Fuca. The shoreline of the Reservation is typically rocky headlands and sandy beaches. Over 1,000 acres of the land bordering the Pacific Ocean have been reserved as a Wilderness Area. Other reserved areas are Tatoosh and Waadah Islands. The Tatoosh Island complex supports the largest nesting colony of common murrelets in Washington. Ten species of marine birds, representing 88% of the birds known to be injured or killed from the **Tenyo Maru** oil spill, nest on Tatoosh Island (Parrish 1996a).

State Upland Properties

The terrestrial environment of the Olympic Peninsula encompasses diverse topography, geology, and biology. The forest and stream ecosystems that are connected to the area affected by the **Tenyo Maru** oil spill provide complex and numerous means of ecological support to various primary injured species. These connections can be direct, such as providing habitat for certain seabirds, or indirect, such as providing the sedimentation regime necessary to support kelp communities. Upland areas also support numerous plant, mammal, fish, and bird communities. Management of upland area use is determined by its ownership. The following paragraphs describe the Washington State management programs.

Upland Trust Lands. The DNR manages substantial holdings of upland trust lands in the watersheds that drain to the primary marine area. A Habitat Conservation Plan for Western Washington has recently been adopted that will provide long-term protections for the northern

spotted owl and other species of concern, including salmonids (Washington Department of Natural Resources **1997**).

Washington Department of Natural Resources - Forest Practices Program. The DNR, under the direction of the Forest Practices Board, regulates forest practices on private forest lands. The program evaluates forest practices and assesses environmental impacts.

Washington Department of Natural Resources - Special Lands Program. The DNR acquires and manages special lands, of significance to unique or threatened plants or animals, as Natural Area Preserves or Natural Resources Conservation Areas and cooperates with other authorities to create parks or reserves as warranted.

Olympic Coast National Marine Sanctuary

The Northern Washington coastal area also includes Olympic Coast National Marine Sanctuary (OCNMS), covering an area of approximately 3,300 square miles. The OCNMS is managed by the National Oceanic and Atmospheric Administration. From Koitlah Point west of Neah Bay in the north to the mouth of the Copalis River in the south, the shoreline boundary is mean higher high water where adjacent to federally owned land (including Olympic National Park and U.S. Fish and Wildlife Service Refuges) and mean lower low water mark when adjacent to state owned land or tribal land. Seaward boundaries approximate the 100 fathom isobath, extending offshore 30-40 miles. The Sanctuary supports one of the world's most diverse kelp communities and provides extensive habitat for myriad **seabird** and marine mammal species. It complements the area's other designations by providing protected status to marine waters that surround national wildlife refuge islands and national park coastal lands, which are vital foraging habitats for **seabirds** and marine mammals.

Olympic National Park

A narrow, detached portion of the Olympic National Park extends south from the Makah Tribal lands to Kalaloch. The Park is managed by the National Park Service. It is known as the coastal strip and has 57 miles of the most primitive natural coastline in the lower 48 states. The dramatic sea, cliffs, headlands, islands, and seastacks, coupled with the rich biological and archeological resources, provide a unique recreational experience. Five major intertidal habitat types have been described for this wilderness coast, making it one of the most complex and diverse shoreline communities in the United States. The coastal strip varies between 0.5 and 3 miles in width. The Park boundary extends seaward to the lowest low tide line and includes the intertidal beaches, rocky headlands and tidepools. About 70% of the 43,000 acres is Congressionally designated as wilderness. It has also been designated by the United Nations Educational Scientific and Cultural Organization (UNESCO) as a Biosphere Reserve and a World Heritage Site.

National Wildlife Refuges

The National Wildlife Refuges are managed by the U.S. Fish and Wildlife Service. The outer coast affected area in Washington includes four National Wildlife Refuges (NWR): Copalis

NWR, Flattery Rocks NWR, Quillayute Needles NWR, and the Willapa Bay NWR. They are comprised of approximately 870 islands and rocks strung along the coast. All the National Wildlife Refuge islands north of Grays Harbor, with the exception of Destruction Island, have been designated as wilderness. The Willapa Bay NWR provides feeding and resting habitat for migratory shorebirds. The San Juan Island NWR is made up of 83 rock islands and reefs scattered throughout the San Juan Island complex, including Smith Island, most of which have been established as wilderness areas. Six National Wildlife Refuges have been established along the Oregon coast. The Oregon Islands National Wildlife Refuge includes the Oregon Islands which extend almost the entire length of the Oregon Coast, Cape **Meares** NWR and Three Arch Rock NWR. The Refuge islands in Washington and Oregon provide nesting, foraging, and resting habitat for seabirds. They are also important as **pupping**, resting, and molting sites for marine mammals.

2.1.2 **Species in the Affected Environment**

Marine Birds

Over 72% of Washington's marine birds nest on the outer coast north from near Point Grenville to Seal and Sail Rocks near Neah Bay (Speich and Wahl 1989). Sixteen species of marine birds nest in this area with a total estimated population over 218,000 birds. The most numerous species include Cassin's **aukllets**, Leach's storm-petrels (*Oceanodroma leucorhoa*), common murrelets, rhinoceros **aukllets**, glaucous-winged (*Larus glaucescens*) and western gulls (*Larus occidentalis*), and tufted puffins (Speich and Wahl 1989).

Approximately 22% (over 66,000 birds) of Washington's marine birds nest within the inner marine waters, with 16% found on Protection Island (Speich and Wahl 1989). Protection Island is one of the three main rhinoceros **auklet** colonies in the state with over 55% of the state's breeding population for this species. It supports 30% of the state's breeding populations of glaucous-winged gulls and pigeon **guillemots**, and 18% of the state's total number of pelagic cormorants (*Phalacrocorax pelagicus*) (Speich and Wahl 1989). Thirteen pairs of tufted **puffins** nested on Protection Island in 1993 (Wilson, pers. **comm.**, 1996), which is the only puffin nesting colony currently in Washington's inner marine waters. Approximately 33% of Washington's double-crested cormorants (*Phalacrocorax auritus*) nest in the inner marine waters (Speich and Wahl 1989).

More than a dozen species of **seabirds** nest on the rocks and islands of the 300 mile Oregon Coast. The Oregon Islands and Three Arch Rocks **NWRs** provide critical nesting habitat for more than one million seabirds. Common murrelets are the most numerous with an estimated mean breeding population since 1988 of 722,500 birds (Lowe and **Pitkin** 1996). Other nesting **seabirds** include rhinoceros **aukllets**, pigeon guillemots, tufted puffins, cormorants, and western and glaucous-winged gulls.

Common murrelets, marbled murrelets and rhinoceros **aukllets** will likely benefit from many of the restoration projects. The following species discussions provide information as to why their

populations are of particular interest in Washington.

Common Murres. Common murre populations in Washington are of concern for the following reasons: 1) a precipitous decline in colony attendance throughout the state occurred during the 1983 El Niño, principally at the southern colonies around Pt. Grenville, and at Split and Willoughby Rocks, attendance has remained depressed through at least the 1996 breeding season; 2) during the time period of little or no recovery since the 1983 El Niño, two major oil spills have occurred off the coast of Washington, the *Nestucca* and the *Tenyo Maru*, and common murres were the principal seabird species killed in both spills; 3) common murres are the principal seabird species killed in gillnets; oil spills and gillnet mortality may have contributed to the lack of common murre recovery since the 1983 El Niño (see Takekawa et al. [1990] for effects of gillnet and oil spill mortalities on common murres nesting in California) and; 4) common murres on Tatoosh Island, the only stable colony in Washington, have been seriously disrupted by bald eagles and predation by gulls (Parrish 1995, 1996a).

Marbled Murrelets. The Washington, Oregon, and California populations of marbled murrelets were listed as threatened under the Endangered Species Act (ESA) on September 28, 1992 (57 Fed. Reg. 45328). The Washington State Wildlife Commission (now Fish and Wildlife Commission) classified the Washington population of marbled murrelets as threatened in October 1993 (Protected Wildlife Classification, subcategory Threatened; WAC 232-12-o 11).

The most recent estimate of the Washington breeding population of marbled murrelets was 5,000 birds (Speich and Wahl 1995). This estimate is based on surveys in the early 1980s. Using current juvenile/adult ratios and a population model, Beissinger (1995) indicated that the marbled murrelet population is declining 4-7% annually. This decline is primarily due to the loss of old growth forests. Nest predation, mortality through net fisheries, and oil spills have also contributed to this decline.

Rhinoceros Auklets. Washington's population of rhinoceros auklets is estimated at less than 60,000 birds (Speich and Wahl 1989). Approximately 50% of the population is located on the outer coast of the Olympic peninsula (primarily on Destruction Island) and the remainder are located in the Straits of Juan de Fuca on Protection Island and the San Juan Islands (primarily on Smith Island) (Speich and Wahl 1989). The population trend for rhinoceros auklets on the outer coast is unknown. However, a decline in the number of rhinoceros auklets nesting in the inner marine waters has been observed. Between 1976 and 1993, a 26% and 40% decline of rhinoceros auklet nesting burrow densities was recorded on Kannen and Violet Points, respectively, on Protection Island. A decline in the number of rhinoceros auklets nesting on Smith Island, observed the past 6 to 7 years, has been attributed to disturbance by a double-crested cormorant colony situated on top of the auklet colony. The number of rhinoceros auklets drowned in gillnets is second only to common murres. The *Nestucca* and *Tenyo Maru* oil spills also killed rhinoceros auklets in Washington State.

Kelp Community

A number of species of considerable ecological, commercial, and recreational value are known to rely on kelp beds for refuge and feeding, and potentially could benefit from kelp restoration activities. The importance of kelp beds can be divided into three functions: productivity, habitat, and hydrodynamics.

Productivity. Kelp plants provide input to the food web in four ways: (1) directly while the plant material is still attached to a substrate, (2) directly while the plant material is detached but still respiring (floating mats, etc.), (3) indirectly by providing detritus that fall to the bottom and is eaten, and (4) by producing dissolved organic matter (DOM) that is food for many microorganisms. Productivity of kelp beds is estimated at between 350- 1500 g carbon/m²/yr, making them one of the most productive systems on earth.

Kelp beds support a rich and diverse community of planktonic, epiphytic, and epibenthic organisms that serve as prey for fish and invertebrates. Kelp is an important part of the diet of herbivorous invertebrates such as purple urchins (*Strongylocentrotus purpuratus*), red sea urchins (*S. fuscus*) and northern abalone (*Haliotis kamtschatkanu*). Young-of-the-year, juvenile, and adult forage fish species such as Pacific herring (*Clupea pallasii*), northern anchovy (*Engraulis mordax*), and sand lance (*Ammodytes hexapterus*) are abundant in and around kelp beds and feed extensively on planktonic invertebrates associated with these beds. These forage fish also form an important component of the diet of piscivorous seabirds (e.g., common murre, rhinoceros auklet) occurring in the northeastern Pacific Ocean (e.g., Vermeer et al. 1987). Adult lingcod (*Ophiodon elongatus*), true cod (*Gadus macrocephalus*), cabezon (*Scorpaenichthys marmoratus*), and large schools of black rockfish (*Sebastes melanops*) and yellowtail rockfish (*S. flavidus*) aggregate in and along the periphery of kelp beds and forage to a large extent on other fish using the kelp beds.

Habitat. Bull whip kelp, *Nereocystis luetkeana*, and giant kelp, *Macrocystis integrifolia*, beds provide significant habitat for a number of organisms. The beds provide a place of refuge, and a substrate for reproduction. The canopy formed during the summer and fall shades the plants below, thereby influencing the amounts and kinds of plants that co-exist in the kelp beds.

“The *Nereocystis luetkeana* plants create a habitat wherein diversity and abundance of fish species increases over non-kelp areas” (Leaman 1976). Wheeler (1990) states “larger pink salmon, lingcod and Pacific cod were found more frequently in *Macrocystis* beds than in non-kelp areas. Large lingcod, large Pacific cod, small pink salmon and small chinooks are more commonly found in *Nereocystis* beds over non-kelp areas.”

Sea otters (*Enhydra lutris*), recently reintroduced to the Washington coast, have a close association with kelp beds. They feed on many of the associated organisms, use kelp to rest in, and their feeding activities profoundly change the kelp community (Bowlby et al. 1988).

Some marine birds and shorebirds, such as marbled murrelets, have been demonstrated to be closely associated with the kelp beds along the north coast and western Strait of Juan de Fuca (Thompson 1996).

Hydrodynamics. Hydrodynamic effects can be divided into those with physical and biological ramifications. Kelp beds absorb wave energy and dampen wave action shoreward of the bed. Wave action influences beach slope and stability, and beach material makeup and therefore loss of kelp and the resultant wave dampening may change the beach makeup and the types or numbers of organisms that use the beach material.

Kelp plants act as active transporters of rock material (Emery 1941). Young sporophytes begin growth on any rock surface in size from sand grains up to boulders. When the plant reaches the size at which the hydrodynamic drag of the plant can move the rock substrate, the plant/rock may be moved into deeper water, onto the shore, or along the shore. Significant amounts and sizes of rocks up to one foot in diameter can be moved in this manner. Reduction in the number of plants or plant size will reduce this material transport. (Duggins 1988)

Marine Mammals

Several populations of pinnipeds are common to the Olympic Coast, including harbor seals (***Phoca vitulina***), California sea lions (***Zalophus californianus***), and Stellar sea lions (***Eumetopias jubatus***) (NOAA 1993). An important sea otter population numbering about 500 individuals, is located along the Olympic Coast (Jameson 1997). The California gray whale (***Eschrichtius robustus***) and harbor porpoise (***Phocoenaphocoena***) are also common to the area (NOAA 1993).

3.0 DESCRIPTION OF RESTORATION ALTERNATIVES, PROPOSED PROJECTS, AND ENVIRONMENTAL CONSEQUENCES

3.1 Development of Restoration Alternatives

The OPA regulations require trustees to develop a reasonable range of primary and compensatory restoration alternatives and then identify the preferred alternatives based on criteria provided at 15 CFR Part 990.54(a). Primary restoration is action(s) taken to return injured natural resources and services to baseline on an accelerated time frame. Compensatory restoration is action(s) taken to compensate for the interim losses of natural resources and services pending recovery.

The National Environmental Policy Act (NEPA) applies to restoration actions taken by federal trustees. To reduce transaction costs and avoid delays in restoration, the OPA regulations encourage the trustees to conduct the NEPA process concurrently with the development of the draft restoration plan.

To comply with the requirements of NEPA, the Trustees analyzed the effects of each preferred alternative on the quality of the human environment. NEPA's implementing regulations direct federal agencies to evaluate the potential significance of proposed actions by considering both context and intensity. For most of the actions proposed in this **DRP/EA**, the appropriate context for considering potential significance of the action is regional, as opposed to national or worldwide.

Several restoration alternatives included in this section are based on conceptual designs rather than detailed engineering design work or operational plans. Therefore, details of specific projects may require additional refinements or adjustments to reflect site conditions or other factors. Restoration project designs also may change to reflect public comments and further Trustee analysis. The Trustees assume that implementation of restoration will begin in 1999-2000.

The primary goal of restoration is to meet the statutory objective to compensate the public for injuries to natural resources from the *Tenyo Maru* oil spill. Injury was clearly documented for **seabirds** and kelp from this incident. Therefore, the goals provided in this Plan are to restore, rehabilitate, or replace specific populations of **seabirds** and kelp beds (including their associated communities). The primary objective is to provide a functioning and sustainable ecosystem where specific populations of **seabirds** and kelp beds are enhanced to provide a net gain of habitat function beyond existing conditions.

In accordance with the consent decree, the MOA, OPA and the *Tenyo Maru* Trustee Committee's Resolution 96-1, expenditures from the *Tenyo Maru* restoration fund are limited to implementing restoration projects that meet the following minimum restoration criteria:

- 1) Restoration projects must be directly linked to natural resources shown to be injured

from the ***Tenyo Maru*** oil spill. Seabirds, and to a lesser extent, kelp habitats, are the only resources for which there exists documented injury;

- 2) Restoration projects will be linked either geographically or biologically to the physical area where the impacts of the spill occurred;
- 3) Restoration projects. will restore, rehabilitate, replace or acquire the equivalent of injured natural resources; and,
- 4) Restoration projects will be consistent with relevant federal, state and tribal laws, regulations and policies.

Pilot Projects Conducted to Assist with Restoration Planning

Some of the dollars generated as interest from the restoration fund were used to support pilot projects necessary for restoration planning. These projects also helped establish the necessary baseline from which the success of the restoration efforts can be measured. The Trustee Committee determined that projects had to enable the preparation of the **RP/EA** and be limited to the collection of data that would have been irretrievably lost if the project were not conducted, and was beyond normal agency work. The projects funded for these reasons were:

- 1) FWS aerial surveys of common murre colonies in Washington and Oregon. The FWS historically has conducted annual, single aerial surveys off the coast of Washington and Oregon. During each of the 1995, 1996, and 1997 common murre breeding seasons, three additional surveys were flown in Washington and two in Oregon.
- 2) Tatoosh Island common murres. Common murre productivity and reproductive success on Tatoosh Island was evaluated in 1995-97. The studies were conducted by the University of Washington, and continued similar work initiated in 1991.
- 3) Seabird prey-base study. A seabird prey-base study was conducted in 1995 as a cooperative program between the University of Washington and WDFW.
- 4) At-sea distribution of common murres and marbled murrelets. An at-sea distribution study of common murres and marbled murrelets was conducted by WDFW in 1996 and 1997.
- 5) Kelp distribution. Aerial surveys of kelp distribution were conducted in 1996 and data were analyzed from the 1994 survey.
- 6) Common murre population genetics. A population genetics analysis of common murre colonies in Washington and Oregon was conducted in 1996 and 1997 by

WDFW to determine the type of restoration (including natural recovery) that would be best prescribed for specific localities.

3.2 Proposed Alternatives and Potential Projects

To restore natural resources lost as a result of the *Tenyo Maru* oil spill, the *Tenyo Maru* Trustee Committee developed four Alternatives:

- A) No action/ Natural Recovery (required by the OPA and NRDA regulations and the NEPA process)
- B) Population-Focused Restoration
- C) Habitat-focused Restoration
- D) An Integrative Approach

The following sections describe the proposed restoration alternatives, their environmental consequences, and specific project proposals. Additional and different projects may be proposed or adopted based on public and agency comments received on this **EA/DRP**. Work plans and detailed scopes, schedules, and budgets and the appropriate environmental documents and applicable permits will be prepared for review and adoption by the Trustee Committee before implementation of any project. The project managers will ensure that all monitoring reports and data will be shared among all the selected projects to ensure a more comprehensive picture of the effects of those activities on the bird and kelp species being restored under this restoration program. The alternatives are evaluated and a preferred alternative is named in Section 4. Project proposal schedules and estimated budgets are provided in Section 4.1.

3.2.1 **Alternative A: No-Action/Natural Recovery**

NEPA requires the Trustees to consider a “no action” alternative, and the OPA regulations require consideration of the equivalent, the natural recovery option. Under this alternative, the Trustees would take no direct action to restore injured natural resources or compensate for lost services pending environmental recovery. Instead, the Trustees would rely on natural processes for recovery of the injured natural resources. While natural recovery would occur over varying time scales for various injured resources, the interim losses suffered would not be compensated under the no-action alternative.

The no-action alternative has no direct environmental consequences because, by definition, no manipulations to the environment would take place. However the no-action alternative may negatively affect injured populations indirectly if particular anthropogenic activities, independent of the *Tenyo Maru* restoration process, take place. For example, the no-action alternative precludes the use of restoration funds to purchase forest habitat that has direct benefit to marbled murrelet populations. **If these** habitats are logged, marbled murrelet populations will be negatively affected.

3.2.2 Alternative B: Population-Focused Restoration

Projects conducted under this alternative will attempt to beneficially affect populations of injured species by directly or indirectly manipulating one or more population demographic factors (e.g., survival, number of adults attempting to breed, age at first breeding attempt). A population's size may be increased, restored, or distribution may be altered by increasing immigration, releasing rehabilitated injured individuals, enhancing natal recruitment, and improving reproductive success at specific localities.

The rate of **seabird** population growth is a function of net immigration-emigration, survival, and productivity (i.e., reproductive success); restoration projects conducted under this alternative will focus on these population parameters. As with seabirds, populations of kelp are also affected by rates of survival, reproductive success and immigration-emigration.

Specific project proposals consistent with the population-focused restoration alternative are identified in Sections 3.2.2.1 through 3.2.2.4. Although any manipulation to a wild population may have unforeseen consequences to that population or to the ecosystem to which that population is a part, the environmental consequences of properly conceived, designed, implemented, and monitored projects conducted under this alternative should be minimal. Under this alternative, no adverse impacts to threatened or endangered species are anticipated, however, the appropriate consultations under the Endangered Species Act will be pursued for projects that may affect federally listed species.

3.2.2.1 Restoration of Common Murre Colonies in Copalis National Wildlife Refuge, Washington

Purpose(s): The purpose of this project is to restore common murre colonies, using social attraction techniques, to locations in the Copalis NWR that are not used now for breeding, but traditionally were the locations of the largest breeding colonies in Washington State.

Project goals: The goals of this project are to increase the presence of murres at the site, elicit breeding behavior, breeding activities, and breeding attempts. The long term goal is to reestablish a self-sustainable breeding population within the Copalis NWR.

Potential project coordinators: U.S. Fish and Wildlife Service and Washington Department of Fish and Wildlife

Project description: This project assumes that the reason common murres are not attempting to breed at the chosen site is the result of low population numbers and/or behavioral phenomena associated with the social aspects of common murre colony dynamics. Social attraction is a restoration technique that uses decoys, sound recording, and other devices to attract potential recruits to a specific location or habitat. The technique works much the same way "traditional" waterfowl decoys work in that decoys, sound recordings, and other devices (e.g., mirrors) are placed in a way that mimics an

active breeding colony, sub-colony, or social **aggregation**.

Aerial surveys during 1997-1998 indicated larger numbers of murres attending some of the colonies in the Point Grenville area of the Copalis NWR. Small numbers (5-10) of murre chicks were observed. Phase I information will be used to intensively assess the status of these colonies over a two-year period. The information gathered during Phase I will be used to determine whether Phase II should be implemented. This project may be determined infeasible if implementation would interfere with natural breeding efforts or if factors other than the lack of social cohesion are resulting in a lack of breeding efforts at these sites.

Phase II would involve the deployment of common murre social attraction devices at historical breeding colonies within the Copalis NWR.

Proposed activities:

Phase I - Feasibility Study

The purpose of Phase I is to assess the potential effectiveness and feasibility of the project. This would involve two years of data collection to determine if: (1) social attraction enhancement activities are warranted, and (2) project implementation would be impeded by physical or natural limitations. No decoys will be deployed during Phase I. Several observation points at Point Grenville will be established. Sites will be monitored to determine if common murre breeding is currently occurring at any of the potential sites or any other colony rock in the vicinity. Monitoring will also determine if disturbance (by eagles or any other natural or anthropogenic activities), and not the lack of social attraction, is preventing breeding and whether the disturbance can be managed. Because breeding activity may be occurring on sides of the rock not visible from the shore, boat and aerial surveys of the areas will also be conducted to assess attendance and breeding status.

If the results from Phase I suggest that social attraction techniques are a viable option at these sites, and these sites can be adequately monitored for behavioral interactions with the attraction devices, and for reproductive success, Phase II should be implemented. If carrying out Phase II is not feasible or beneficial, the remaining funding will be redistributed to the Marbled Murrelet Habitat Protection and River Silt Reduction Project (Section 3.3.1)

Phase II

Phase II would deploy the social attraction devices and monitor the results. Roughly 200-500 life-sized common murre decoys, in standing and incubation postures, would be placed at a single site. Decoys will be arranged in clusters, with the size and spacing of each group dependent on the topography of the site, and based on preliminary results from other similar projects, such as the Apex **Houston** restoration project, managed by the FWS for the OPA Trustees (USFWS 1995). In addition to decoys, mirrors and omnidirectional

weather resistant loudspeakers will be placed throughout the site. The loudspeakers will broadcast common murre vocalizations typically heard at breeding colonies.

Benefits: This specific project benefits common murre populations, injured by the *Tenyo Maru* oil spill, by attempting to increase the number of birds breeding at a specific habitat. It alters **seabird** behavior to entice the murres to resume breeding within the Copalis NWR where historically large breeding colonies existed. Affecting immigration potentially may be the easiest and fastest way of increasing a population if there are mechanisms by which individuals can be brought or attracted to an area (social attraction). Facilitating relocation of otherwise non-breeding murres to locations where large breeding colonies historically occurred is expected to have a beneficial impact on the species' population.

Environmental consequences: The restoration of **seabird** populations will proceed by increasing the number of individual **seabirds** that attempt to breed. The project **actions** taken under this alternative are designed to increase the rate of immigration, decrease the age at which individuals first attempt to breed, and increase the probability that an adult bird will attempt to breed during any given year, at a particular site. As such, this project provides the mechanisms for relatively rapid colonization and restoration at localities where breeding does not occur, or is severely depressed. Project restoration goals are for nesting murres to increase to a level that would create self-sustaining and viable colonies at target locations.

This project has little or no impact upon other injured resources or resources of concern. Adverse impacts to wildlife could occur as there is some potential for actions that benefit one group of species to have short-term impacts on other species. For example, as the number of individual murres in a specific colony expands, prey fish may be impacted short-term. Raptors may be affected in the short term either negatively by reducing the potential prey base (breeding colony murres) at the translocation site or positively by increasing the potential prey base at the relocation site. A potential negative consequence of this action would be that birds are lured from a more optimal breeding locality to breed at a potentially sub-optimal site. However, it is very unlikely that an entire successful colony would move, so any negative impact would be minimal.

Any environmental consequences associated with population manipulation would be minimal and short-term.

Project goal monitoring: This project includes intensive monitoring of attendance, breeding productivity, and other bird activity at the site and sub-colonies in the vicinity. Monitoring will be linked with the **Seabird** By-Catch Reduction project (Section 3.2.2.4) measuring and comparing Tatoosh Island productivity monitoring data with the Pt. Grenville site. Intensive monitoring of the restoration site, data collection from a reference site, and murre population monitoring (beyond what would normally be conducted by the refuge) would be conducted.

3.2.2.2

Oiled Wildlife Rehabilitation Center

Purpose: The purpose of this project is to provide base funding so that additional funds can be secured and used to improve the capability to rehabilitate oiled wildlife (primarily seabirds) in western Washington.

Project goal: The goal of this project is to improve the State of Washington's ability to rescue, rehabilitate, and release oiled wildlife. This project is premised on the State of Washington securing the remaining funds from other sources to build a permanent rehabilitation facility in the South Puget Sound area and to develop a primary care facility at Neah Bay.

Potential project coordinator: Washington Department of Fish and Wildlife

Project description and activities: Since the Tenyo Mar-u oil spill, Washington has become a leader in the field of oiled wildlife rescue and rehabilitation. Unfortunately, the rehabilitation center, a major component of the state's wildlife rescue and rehabilitation program, has been leased out by the owners for other purposes and will no longer be available for use as a rehabilitation facility. The loss of the facility has suddenly nullified Washington's ability to rescue, rehabilitate, and release oiled wildlife.

This project proposes to provide some funding to the State to help build a rehabilitation center in the South Puget Sound area. The center would operate under the protocols of the Washington Wildlife Coalition. The Washington Wildlife Coalition was convened, and is chaired, by the Washington Department of Fish and Wildlife as required by Section 12 of the 1990 Washington State Legislature House Bill 2494 to plan and coordinate the rescue and rehabilitation of wildlife injured or endangered by spills of oil or other toxic substances. It comprises members and advisors from state and federal agencies, environmental organizations, and industries that have responsibilities, expertise, or interests in the protection of wildlife resources. The proposed rehabilitation center could receive oiled birds **from** any primary care station in Washington or Oregon and provide long-term care for oiled wildlife to prepare them for release back into their natural environment.

This center would also be used to research more effective techniques for cleaning oiled wildlife to maximize the survival rate, especially when rehabilitating threatened and endangered species. When not working with oiled birds from a spill, the center may be used for informational and educational outreach as well as a training facility for wildlife rehabilitations, researchers, and veterinarians.

In addition to a long-term care facility, a **40-foot**, primary care trailer, stocked with appropriate primary bird care supplies would be provided at Neah Bay. This trailer would be permanently positioned on the Makah Reservation at Neah Bay to provide immediate

care for oiled birds in case of another oil spill there. The primary care facility would give emergency care to oiled animals and stabilize them for transport to the rehabilitation center. A pole-barn type roof would be built over the trailer for long term protection from the elements. This primary care station would operate under the direction of the Washington Wildlife Rescue Coalition during oil spills.

Members of the oil or shipping industry that contribute matching funds for building and maintaining the center may be able to use the center at a reduced rate if they have a spill. Oil spillers that did not contribute to the center will likely pay the standard daily rate. Monies collected will be used for operations and maintenance. Any funds collected that exceed the operations and maintenance costs will be placed in a **Seabird** Restoration/Research Account. The **funds** from this account would be used to gain a better understanding of Washington's **seabirds** and to explore new techniques for assuring their survival.

Benefits: To increase the rate of population growth (or to stabilize or reverse a population decline), immigration, survival at any or all age classes, reproductive success, and probability of breeding must be increased. Successfully rehabilitating and releasing oiled **seabirds** may contribute to population recruitment and stabilization.

Environmental consequences: The intent of this project is to provide a starting point to act as a catalyst for the Washington Wildlife Coalition to secure funding for a wildlife rehabilitation center and a primary care facility. The majority of the funding for this project is to come from outside sources. The overall contribution (\$500,000) to the development of the facilities from *Tenyo Maru* funds is about one-fourth of the cost of the center (roughly estimated at **\$1.8 - \$2.2** million). In addition, this project also provides for excess user fees to be returned to **seabird** restoration/research projects.

The environmental consequences associated with providing a catalyst for the collection of additional funds to support wildlife rehabilitation is expected to be minimal. A separate environmental assessment or environmental impact statement (EIS) will be conducted by the State for any rehabilitation facility construction activities. There is a slight possibility that adverse impacts, such as disease, could occur to wildlife from the activities associated with rehabilitation and release of wild animals. Rehabilitated animals may play a vital role in maintaining and improving their species populations and in providing function to the ecosystem. Under this alternative, no adverse impacts to threatened or endangered species are anticipated. Restoring populations through rehabilitating individuals and returning them to the wild population is expected to benefit the species directly.

Project goal monitoring: The Washington Wildlife Rescue Coalition will provide interim reports to the *Tenyo Maru* Trustee Committee on the success of securing additional funds for the rehabilitation facilities and on the process of improving Washington's ability to rescue, rehabilitate, and release oiled wildlife.

3.2.2.3

Public Education Signs and Brochures

Purpose: The purpose of this project is to inform boaters, kayakers, aircraft pilots, and other visitors about disturbance impacts to nesting **seabird** colonies and Makah culturally sensitive areas and educate them on how to avoid such disturbances.

Project goal: The public with access to **seabird** colonies will become informed about the negative impacts of human disturbance on **seabird** productivity and survival. Through education, individuals may modify their behavior that would cause a decrease in disturbance of seabirds.

Potential project coordinators: U.S. Fish and Wildlife Service and Makah Indian Tribe

Project description: An education campaign using on-site interpretation and publications would be developed to describe the wildlife using the coastal NWR islands in Oregon and Washington, and the Olympic Coast National Marine Sanctuary (OCNMS) in Washington (including NWRs and Tatoosh Island). The campaign will focus on messages of the value of protected coastal habitats, **seabird** colonies, why these islands and wildlife are protected, how to avoid human disturbance, and tribal bird terms. The campaign will build on current education efforts in OCNMS in areas of reducing impacts from aircraft overflights. It will build upon multi-agency interpretation and education programs currently operated among FWS, Washington State Parks (WSP), Olympic National Park (ONP), and OCNMS. The campaign will also complement and enhance FWS education efforts underway with **Nestucca** oil spill restoration funds.

Proposed activities: (1) Interpretive planning. Education program representatives from FWS, NPS, WSP, OCNMS, coastal tribes and other potential partner agencies and organizations will identify needs, opportunities and critical gaps in existing information and education programs. The group will also assist in the development of strong marine resource protection and restoration messages that will be effective with specific target audiences and assist in the design of methods to monitor the effectiveness of the education campaign. (2) Signs would be placed where boaters have access to marine waters near **seabird** nesting colonies. Tenyo **Maru** oil spill restoration funding would be used at eleven ports along the Oregon Coast from the Columbia River south to Brookings, Oregon and at Tatoosh Island, in OCNMS. This project will correlate with Nestucca oil spill restoration funding to address the remaining Washington Coast. (3) Publications. Brochures and other printed material would be developed and distributed to visitors and users of the marine environment, including recreational users (kayakers, sportfishers, divers, private pilots etc.) and commercial users.

Benefits: It has been documented that **seabird** reproductive success is reduced through disturbance resulting from human intrusion into colonies (Anderson and Keith 1980; Anderson 1988; Hunt 1972; and Kury and **Gochfield** 1975). Boats, private and military aircraft, and people have been observed near or on nesting islands. Birds and mammals have been observed to leave the islands in panic flights as a direct result of these

disturbances. The frequency and effects of these disturbances on breeding **seabirds** have not been documented. However, the frequency of occurrence is expected to increase as coastal recreational opportunities increase. As the disturbance of common murre colonies is reduced and/or prevented, common murre reproductive success may increase. Reduction of disturbance may also benefit other species that use the islands.

Reducing human disturbance at **seabird** breeding colonies through educational efforts may increase the number of breeding adults and is another example of how controlling human impacts could complement a population-based approach.

Environmental consequences: This project is designed to ease the pressure applied to the environment from human disturbance. Overall habitat quality, and subsequently habitat functionality, may be improved and strengthened from this project.

The indirect consequences of carrying out this project include a greater understanding of human interaction with natural resources, and the consequences of our actions. It is hoped that the educational efforts will result directly in a decrease in disturbance at breeding colonies that should result in increased reproductive success of common murres at coastal Washington and Oregon breeding colonies. An increase in reproductive success may lead to greater numbers of breeding common murres in Washington and Oregon which will maintain species diversity and aid in restoring common murre populations to their pre-spill levels.

The proposed project includes interpretive signs that should make the public more aware of the environment and the impacts they may unintentionally cause. Although not anticipated, there is a slight potential that the interpretive signs could draw attention and more frequent visitors. The signs will be designed to educate, to increase awareness of disturbance impacts, and not to attract visitors. Any negative environmental impacts of the educational project are unlikely.

Project goal monitoring: Project monitoring would involve evaluating the effectiveness of the education campaign through a variety of techniques, including measuring audience exposure to project messages, changes in audience awareness and knowledge of **seabirds** and coastal habitat and documenting changes in audience behavior regarding seabirds.

3.2.2.4

Seabird By-Catch Reduction in Coastal Set-Net Fisheries

Purpose: Certain fishing nets and net fisheries' activities entangle and drown seabirds. The purpose of this project is to reduce or eliminate **seabird**, especially common murre, by-catch in coastal marine set net fisheries. Investigation and monitoring data and reports will be distributed to the Tenyo Maru Trustees.

Project goal: The goal of this project is to increase the average survival of adult murres through gear modifications in local set net fisheries.

Potential project coordinator: Makah Indian Tribe

Project description: This project will be accomplished in two simultaneous parts: development of acoustic pingers and experimental trials in the set net fisheries, and monitoring of the Tatoosh Island common murre breeding colony.

Proposed activities: The project is designed such that each part can be accomplished independently of the others, but all parts are integrated components of the specific objective of restoration of common murres through mortality reduction.

The coastal set net fishery has already undergone extensive modification to reduce harbor porpoise by-catch. Pilot work in Puget Sound gill net fisheries suggests that acoustic pingers may also be successful in reducing **seabird** by-catch (Melvin et al. 1997); however, the frequencies (number of sound waves per second) and amplitude (loudness) at the sound source necessary to elicit the optimum response sensitivity in harbor porpoise and in **seabirds** is different. In addition, there is currently no information on the range of frequencies seabirds, specifically common murres, can detect, or at what frequencies such sounds would need to be projected to have an effect.

Phase I - Laboratory Experiments

Estimated range of maximal frequency sensitivity will be measured. To avoid duplication of effort and other agency funding, the project coordinator will coordinate with any other agency or organization currently conducting related research in this area.

Phase II - Acoustic Pinger Development

There are currently no available off-the-shelf acoustic pingers for seabirds. Acoustic pingers with saltwater switches and LED battery-life displays will be developed in cooperation with the National Marine Fisheries Service (NMFS), acousticians, and acoustic equipment firms.

Phase III - Behavioral Response Experiments

Based on the results of Phase I, a range of acoustic pinger prototypes will be developed and tested in a highly controlled mesocosm. The tests will be designed to determine whether common murres will respond to auditory signals from acoustic pingers.

The necessity of this phase of the project will be scrutinized and evaluated by the Project Coordinator and the Trustee Committee if the project is approved for the final restoration plan.

Phase IV - Field Tests

Based on the pinger development research from phase I-III, one or more acoustic pingers will be selected to test experimentally in the Northwestern Washington coastal set net fishery. The experimental tests would be conducted in the ocean fishing areas and/or in the Strait of Juan de Fuca as necessary. Catch rates measured in experimental nets fitted

with acoustic pingers will be compared to those of control nets without acoustic pingers fished identically in the same area at the same time. The focus of the experimental work would be two-fold: 1) to determine whether by-catch of common murres is significantly reduced when using pingers, and 2) to evaluate and quantify the impact of the use of acoustic pingers on the potential catch of targeted fish species. Testing for differences in catch rates of other seabirds, such as rhinoceros **auklets**, entangled in the fishery may also be possible.

Phase V - Implementation

Depending on the significance in **seabird** by-catch reduction documented in the field trials (Phase IV) and the impacts on catch of targeted fish species, the final phase of this project will be to purchase and distribute acoustic pingers to the fishery, monitoring of by-catch reduction efficacy in the modified fishery and effects on catch of target species, and recommending fishery regulation changes. Research and monitoring data and reports, along with recommendations, will be distributed to the Trustee Committee.

Benefits: A potentially significant portion of the total Washington state common murre population, including breeding and non-breeding adults, subadults, and juvenile birds, may have been killed by the *Tenyo Maru* oil spill, in addition to mortalities of other **seabirds** as previously described in Section 1.2.. A reduction in common murre mortality from by-catch in set net fisheries will help to restore the species to its former breeding level in States of Washington and Oregon. This project attempts to reduce the impacts of set net fisheries on **seabirds** and is considered population-focused restoration because it would potentially alter survival rates of all **seabird** age classes. It will specifically address increasing the average survival of adult murres through gear modification in local set net fisheries, in addition to potentially reducing mortality of adult breeding murres. Implementation of acoustic pingers may be applicable to other gill net fisheries experiencing **seabird** by-catch problems.

, ***Environmental consequences:*** The investigative portion of this project will not have significant negative environmental impacts. The goal of this project is to have little or no impact on the net fishery while deterring **seabirds** from set nets. If there are additional nets set to conduct this investigation, there is potential that there would be an associated increase in incidental take of seabirds. However, the overall goal of the project is to reverse the decline of **seabirds** through the development of fishing methods that reduce incidental take of seabirds. Any negative impacts to fisheries through catch reduction caused by implementing acoustic pingers will need to be evaluated against the benefits of increasing the survival and reproductive success of common murres. Conducting (Phase V) the purchase and distribution of pingers and making recommendations for fishery regulation changes are not direct implementation actions, thus, this phase poses no significant negative impact. The anticipated environmental effect of the project is to maintain Washington State's species diversity and abundance through reducing incidental take of common murres and other **seabirds** in net fisheries.

Project goal monitoring: In addition to monitoring and comparing the catch rates of

seabirds and fish among set nets modified and not modified with acoustic pingers, the population of common murres nesting on Tatoosh Island may be monitored simultaneously with project implementation to determine whether the size and reproductive status of the closest breeding colony are positively, negatively, or neutrally affected by the project(s).

Monitoring activities and data will be shared with common murre restoration data collected in the Copalis NWR Project, if approved (Section 3 .2.1), and with any other *Tenyo Maru* restoration project where it is applicable.

3.2.3 Alternative C: Habitat-Focused Restoration

Habitat is broadly defined as both the biological and physical environment in which kelp occur or individual **seabirds** breed, roost, or forage. Under this alternative, projects would be designed to restore, enhance, replace and/or acquire habitats that provide benefits to a range of natural resources injured from the *Tenyo Maru* oil spill. In this sense, the goal of this alternative is simply to provide quality habitat. It is assumed that the injured species and services would be restored, over time, if such habitat is created or otherwise made available. For example, the protection and/or manipulation of **seabird** habitats may positively affect **seabird** population parameters by increasing the number of breeding adults, increasing reproductive success, and/or increasing survival of individuals of all age classes. However, the goal of this alternative would not be the manipulation of these **seabird** population parameters (see Alternative B), but simply the manipulation and/or protection of the **seabird** habitats.

Specific project proposals consistent with the habitat-focused restoration alternative are identified in Section 3.3.1. **Although** this project proposes to restore natural habitats, any habitat manipulation may have unforeseen consequences. Since the objective of this alternative is to provide quality habitats such that natural processes may result in the recovery of populations, the environmental consequences of properly conceived, designed, implemented, and monitored projects conducted under this alternative should be minimal. Under this alternative, no adverse impacts to threatened or endangered species are anticipated, however, the appropriate consultations under the Endangered Species Act will be pursued for projects that may affect federally listed species. NEPA monitoring will evaluate whether there may be inadvertent environmental impacts affecting the quality of the environment.

3.2.3.1 Marbled Murrelet Habitat Protection and River Silt Reduction

Purpose: The purpose of this project is twofold. One is to permanently protect marbled murrelet nesting habitats in Washington State and the second is to reduce silt deposits on kelp ecosystems at the mouths of streams and rivers in or near the kelp ecosystems affected by the *Tenyo Maru* oil spill. Projects could be combined marbled murrelet habitat protection and silt reduction (preferred), marbled murrelet habitat only, or silt reduction projects only. The driver for selecting projects will be protection of marbled murrelet nesting habitat and buffer areas. The secondary consideration will be reducing

siltation.

Project goals: The goal of the marbled murrelet component is to permanently protect marbled murrelet nesting habitat and/or forest stands next to marbled murrelet nesting habitats. This permanent protection would occur at habitats not presently protected under other regulation and are at risk of being logged or where permanent protection will significantly enhance the future habitat availability for marbled murrelets.

A second goal is to reduce the amount of silt being deposited on the kelp ecosystems off the mouth of streams or rivers in or near the area impacted by the *Tenyo Maru* oil spill. Accepted silt reduction projects would be above and beyond what is required by other regulations and programs to reduce siltation into streams and rivers.

Potential project coordinators: U. S. Fish and Wildlife Service and Washington Department of Fish and Wildlife

Project description: Section 1.2 describes impacts of the *Tenyo Maru* spill on the federally threatened marbled murrelet population in Washington. According to the Recovery Plan for the Marbled Murrelet (USFWS 1997), the major factors contributing to their threatened status include: (1) loss of nesting habitats, and (2) poor reproductive success in the habitat that does remain. In the Pacific Northwest, marbled murrelets forage almost exclusively in the near shore marine environment, but fly inland to nest in mature conifers. One component of this proposed restoration project is to permanently protect and improve marbled murrelet nesting habitats. Besides protecting marbled murrelet nesting habitats, nesting success can be improved by protecting forest stands adjacent to nesting habitats. The marbled murrelet recovery plan (USFWS 1997) recommends decreasing habitat fragmentation by increasing the size of suitable forest stands to provide a larger area of interior forest conditions as a long-term strategy. It also recommends the protection of "recruitment habitats" to enlarge existing stands and buffer occupied sites from predators and wind damage that can gradually degrade the stand.

Kelp was also documented to be injured by the *Tenyo Maru* oil spill. Surveys by the Washington Department of Natural Resources have shown losses of *Macrocystis* and *Nereocystis* beds off the mouths of some northwest Olympic Peninsula rivers in recent years (Van Wagenen 1989-1997; Van Wagenen 1995). Siltation can cause a decrease in kelp populations by: (1) increasing turbidity, therefore decreasing the photic zone; (2) covering otherwise suitable substrates with a layer of fine silt preventing recruitment of microscopic phases of gametophytes or sporophytes; (3) covering boulders or bedrock with finer substrates such as sand or gravel; or (4) smothering of either gametophytes or sporophytes (Dean and Devsher 1983; Devinny and Volsse 1978; Schiel and Foster 1992; Shaffer and parks 1994). The second component of this proposed restoration project involves sediment management projects for selected watersheds to reduce undesired siltation flows through, and deposition in, potential kelp habitat sites in the adjacent near shore areas.

Proposed activities: Fee title acquisition, easements, and other available conservation

measures would be used to secure protection in perpetuity for known occupied marbled murrelet nesting habitat and/or nesting habitat buffer areas. Priority would be given to property that maximizes the acreage protected with available dollars. Stands of mature hemlock with mistletoe would provide marbled murrelet nesting habitats, but would be of lower timber value, thereby reducing the cost. Criteria to be used for the selection of buffer areas are: (1) the buffer area would be adjacent to a forest stand occupied by marbled murrelets; (2) the occupied stand is in protected status from timber harvest; (3) the land is available to be acquired through fee title purchase, an easement, or other conservation measure. Buffer areas could be managed to enhance the expansion of nesting habitats through forest manipulations. Even age stands could be manipulated to accelerate late successional structures. It is possible that direct tree manipulations could be conducted to increase nesting platforms. Protection of marbled murrelet habitats that reduces the impact of siltation into river systems, as well as protecting nesting areas, will be prioritized. The Trustee Committee has not selected marbled murrelet nesting habitat protection project sites at this time. They would be identified through working with agencies and organizations interested in protecting nesting sites. The U.S. Fish and Wildlife Service would be consulted regarding activities underway with the Forest Recovery Plan.

The kelp component of this project is multi-phased. Phase I would identify and prioritize major sources of erosion that produce excessive silt. Local government agencies, tribes, private conservation organizations and landowners will be contacted for input. Phase II will involve implementing projects. Only projects that are not already required by regulation or other programs will be pursued. Projects may include, but are not limited to, repairing failing roads, correcting small slides, placing large organic debris for bank protection, and buying or securing conservation easements for riparian buffer zones. The project coordinator(s) will pursue additional funds from other sources to complete any large projects that are approved. All funds must be available before the project can begin.

Habitats and projects where cost-sharing is available would have highest priority for both marbled murrelet habitat and siltation reduction components of the project.

Benefits: The Trustee Committee emphasizes that habitat protection is one of the most important activities that can be conducted under this alternative. Because land development or certain management methods may alter habitats so injured resources are negatively affected, the protection or enhancement of these habitats may reduce the potential for further injury, and by that allow recovery to continue for marbled murrelet and kelp with little interference.

Environmental consequences: The protection, acquisition, and enhancement of fish and wildlife habitats have been relatively successful in restoring or maintaining fish and wildlife populations. In fact, the enhancement of coastal habitats and the resulting improvement to various ecosystem functions has been the primary method for conducting coastal aquatic restoration over the past **15** years (Simenstad and Thorn 1992). The protection of habitats also would reduce the probability that these habitats would become

fragmented. Fragmented forests are cited as a major reason for the decline of the marbled murrelet (USFWS 1997).

Decreasing siltation in rivers and streams could, in turn, decrease the sediment load into the marine environment from the watersheds. Besides a possible increase of kelp beds near the targeted watersheds, habitat for **salmonid** species and forage fish could be enhanced. An enhanced kelp community offers more forage habitats for salmonids and other forage fish, urchins, and subsequently sea otters and seabirds. Potentially negative impacts that may result from kelp restoration conducted under this alternative would be the redistribution of sediment and soil materials and a change in the processes that affect erosion and deposition. These would be slight short-term impacts that include a temporary increase in sedimentation during construction which would be mitigated with timing restrictions, silt fences, etc. The Trustee Committee does not anticipate these potentially adverse effects to have long-term significance. However, project-specific impacts will be evaluated on a case-by-case basis. Finally, one disadvantage of this alternative is that it may take many years before the injured populations respond to the improvements to their habitats.

The Trustee Committee assumes that this project will result in an overall benefit to the entire suite of injured resources, with relatively few negative impacts.

Project goal monitoring: Marbled murrelet nesting habitat occupancy surveys would need to be conducted minimally for two years at five year intervals to monitor site occupancy (4 years of monitoring over a 10-year period). Buffer areas should, at the minimum, maintain occupied sites where appropriate habitats would have diminished without the buffer protection, and may improve conditions for occupied sites and serve as habitat expansion areas in the future. Monitoring will be included in the projects and an annual report will be provided to the **Trustee Committee** for their review and approval.

3.2.4 Alternative D: An Integrative Restoration Approach

Alternatives A, B and C, can be integrated in a way that increases their effectiveness if they are applied simultaneously. Furthermore, because each of these alternatives attempt to increase populations by affecting specific population parameters, they are not independent.

Individuals within populations are affected by both the biological and physical environment. As such, the recovery of a population following events such as oil spills depends on both physical and biological factors. Because these factors operate at varying temporal and spatial scales, their relative effects are often difficult to identify. Furthermore, human activities contribute to both the physical and biological environment of populations further complicating our ability to identify any single factor that regulates or affects, independent of other factors, the growth of a population. The most effective restoration of populations affected by oil spills may require an integrated approach. This integrated approach would use all available techniques that promise predictable and testable results. Thus, this alternative proposes to combine actions described

under Alternatives A, B and C, and to implement an integrated approach to seabird and kelp restoration.

The environmental consequences of projects that may occur under this integrated approach include the environmental consequences predicted under Alternatives A, B and C. No significant impacts to threatened or endangered species are expected to result from the integrated approach. If actions under this alternative are determined to have an adverse effect on the quality of the human environment, the project would be redesigned, relocated, or possibly abandoned. This alternative could indirectly benefit a variety of federally threatened and endangered species and state listed sensitive species by providing nesting, feeding, resting, rearing and other forms of habitats used during the lives of these species.

4.0 SELECTION OF THE PREFERRED ALTERNATIVE

The Trustee Committee has selected Alternative D-An Integrative Restoration Approach as the preferred alternative for the *Tenyo Maru* restoration plan. The following section summarizes the factors considered in this decision.

Alternative A: No Action/Natural Recovery

Restoration of the injured resources under the no-action alternative would occur only through natural processes and existing or future programs that are unrelated to this restoration plan. This alternative is the baseline against which other alternatives are compared. In order for the no-action alternative to be selected as a preferred restoration alternative, it must be more efficient and effective in restoring the environment than projects that would be conducted under other alternatives. The no-action alternative would not increase the rate of restoration of the injured natural resources and habitats beyond what will result from natural processes and existing or future programs.

This alternative recognizes the capacity of ecosystems to recover naturally and does not in any way alter existing habitats. The principal advantages of this approach are that it permits the natural recovery process to function uninhibited by human intervention and no monetary costs are associated with it because natural processes determine the trajectory of the system.

The no-action alternative could adversely affect wildlife over the long-term because no action would be taken to enhance or restore sensitive injured resources. Without some type of enhancements, these species, and their habitats, may continue to decline. Threatened species, such as the marbled murrelet, may never reach their pre-spill recovery potential without additional protection and enhancement restoration activities.

OPA clearly establishes trustee responsibility to seek compensation for interim losses pending recovery of the natural resources. This responsibility cannot be addressed through a no-action alternative.

Although some natural recovery is expected, it is the Trustees' opinion that direct intervention is required to address potential acute and sub-lethal injuries to the natural resources resulting from the spill. In addition, no benefits would be realized from the settlement to recover injured resources and the obligations of the consent decree would not be met. For these reasons, the Trustee Committee did not select the no-action alternative as an effective restoration option.

Alternative B: Population-Focused Restoration

The goal of this restoration alternative is to increase populations of seabird and kelp through direct manipulations to population parameters. Actions taken under this alternative are designed to increase the rate of immigration and potential breeding, decrease the age at which individuals first attempt to breed, decrease disturbance at nesting colonies to potentially increase nesting success, and increase the probability that an adult bird will survive and successfully breed during any given year. As such, this alternative provides the mechanisms to reduce the mortality of

adult seabirds and for rapid colonization and restoration at localities where breeding does not occur, or is severely depressed.

The environmental consequences associated with population manipulation restoration should be minimal. Adverse impacts to wildlife could occur as there is some potential for actions that benefit one group of species to have short-term impacts on other species. In addition, increased interaction between predators and injured prey species may result. There would be no significant effects on the quality of the human environment if these projects are implemented.

The Trustee Committee considers this a strong alternative for an effective restoration of injured resources.

Alternative C: Habitat-Focused Restoration

The objective of this restoration alternative is to provide quality habitats such that natural processes may result in the recovery of injured populations. Furthermore, quality habitats may also provide the range of resources necessary to maintain food webs or other structural components of ecosystems.

The permanent protection of habitats is a viable restoration tool that clearly offers not only the potential for restoration of the resources injured by the *Tenyo Maru* oil spill, but also the potential for comprehensive rehabilitation and protection, in perpetuity, of the ecosystems in which these injured species are a part. The proposed projects listed under this alternative will potentially increase the amount of protected nesting habitats available to marbled murrelets and improve conditions for nesting at existing occupied stands, and decrease sedimentation in selected watersheds to enhance kelp beds at the mouth of rivers.

Protection of nesting habitat and a decrease in nesting predation and occupied stand degradation could help reduce the rate of decline of marbled murrelets in Washington. An enhanced kelp community offers more forage habitats for salmonids, and other forage fish, urchins, and subsequently sea otters and seabirds.

Permanent protection and alteration of existing habitats offer moderate to high potential for benefitting injured resources. In addition, impacts from application are low to moderate. The habitat-focused alternative has a high potential for reducing habitat fragmentation and would directly benefit functions that support fish and wildlife resources. Improvement of habitat functions has been the primary method of conducting coastal aquatic restoration over the past fifteen years (Simenstand and Thorn 1992). There is a relatively long history documenting the success of this type of action that has shown that fisheries and wildlife resources can benefit from constructing and rehabilitating natural habitats. This alternative offers a growing level of confidence to restore functioning habitats for injured resources.

Alternative D: An Integrative Restoration Approach

The intent of the Trustee Committee is to provide a restoration plan that will restore populations

injured by the Tenyo *Maru* oil spill and balance activities so that the integrated structural components of whole ecosystems (e.g., physical habitats, food webs) are preserved or enhanced. This integrative approach to restoration combines the positive aspects of Alternatives A, B, and C, and maintains the low level of negative environmental consequences assumed to be associated with these alternatives. This will provide not only the greatest array of potential projects, but also the greatest opportunity to integrate projects into comprehensive ecosystem-level restoration, benefitting the greatest number of species.

This integrative approach to restoration is the only alternative in this restoration plan that fosters comprehensive restoration of injured resources at both the population and ecosystem levels, and by that, promotes the long-term sustainability of resources. It provides the greatest flexibility and the most options for restoring, replacing, rehabilitating, and/or acquiring the equivalent of natural resources injured as the result of the discharge of oil, and therefore, has been identified by the Trustee Committee as the preferred alternative.

4.1 Proposed Project Schedules and Estimated Budgets

Restoration of Common Murre Colonies in Copalis National Wildlife Refuge, Washington State

Schedule= Upon final approval of the project; a specific work plan for Phase I will be generated by the project coordinator(s). Phase I will be completed within two years. If Phase II is conducted, there will be an annual review of the project and the Trustee Committee will discuss the progress and evaluate the relevance of continuing the project.

Estimated budget from Tenyo Maru Funds: \$1,800,000

*Any unused finding will be redistributed to the Marbled Murrelet Habitat Protection and River Silt Reduction Project (Section 3.3.1).

Oiled Wildlife Rehabilitation Center

Schedule: Upon final approval of the project, the Washington Wildlife Rescue Coalition has three years to secure outside funds for the project. Any *Tenyo Maru* dollars that are not made available for the rehabilitation facilities will be redistributed to the Marbled Murrelet Habitat Protection and River Silt Reduction Project (Section 3.3.1).

Estimated budget from Tenyo Maru Funds: \$500,000

*If the State is unable to secure outside funding, the Tenyo *Maru* restoration contribution of \$500,000 will be redistributed to the Marbled Murrelet Habitat Protection and River Silt Reduction Project (Section 3.3.1).

Public Education Signs and Brochures

Schedule= Upon final approval of the project proposal, implementation must begin within two years.

Estimated budget from Tenyo Maru Funds: **\$100,000**

Seabird By-Catch Reduction in Coastal Set-Net Fisheries of Washington State

Schedule: Phase I - Frequency ranges will be determined **18** months to 2 years following final approval of the project. At the end of Phase I an interim report will be provided to the Trustee Committee for their review and approval.

Phase II - Prototypes will be developed for in-laboratory and in-field testing within 1 year to **18** months following the completion of Phase I of the project.

Phase III - If this phase is approved by the Project Coordinator and Trustee Committee, common murre responses will be quantified within **18** months to 2 years following the completion of Phase I of the project.

Phase IV - The quantification results of **seabird** by-catch reduction and impacts on catch of targeted fish species will be distributed in a report to the Trustee Committee within 3 years following the completion of Phase III.

Phase V - Depending on the results of the field trials (Phase IV) in reducing **seabird** by-catch and on the impacts to targeted fish species, recommendations for regulatory changes requiring pingers or **other** relevant modifications and the purchase and distribution of pingers to the fishery will be completed within two years of the completion of Phase IV. A final report will be provided to the Trustee Committee.

Colony monitoring - Quantification of murre population trends and correlation of trends with, among other variables being monitored, the **by-catch** reduction project, may be conducted intermittently throughout the project for 4-5 years. Annual reports will be provided to the Trustee Committee for their review and approval. Since this monitoring component is to be shared among other approved *Tenyo Maru* restoration projects, the monitoring schedule will be integrated with all applicable projects.

Estimated budget from Tenyo Maru Funds: **\$ 585,000 to \$650,000.**

Any unused funds remaining from overestimation of cost or cost savings from shared monitoring or modifications (e.g., delete phase III) will be redirected to Marbled Murrelet Habitat Protection and River Silt Reduction [Section 3.3. 1].

Marbled Murrelet Habitat Protection and River Silt Reduction

Schedule: Suitable available marbled murrelet nesting habitat protection sites will be selected within 2 years of the final approval of the project. In the interim, the Trustee Committee will identify and consult with co-trustees and environmental organizations who would be willing to assume title on any appropriate parcels or to guarantee their conservation status and restricted uses. Permanent habitat protection (purchase, lease, conservation easement, etc.) will be secured within 1 year of final approval of the site by the Trustee Committee. Because of extenuating circumstances that may be associated with securing properties, the Trustee Committee may choose to extend this schedule on a case-by-case basis. If the time limits are exceeded, the funds earmarked for marbled murrelet nesting habitat protection will be reallocated to other *Tenyo Maru* projects identified in the plan.

Phase 1 (feasibility phase) of the river silt reduction component will be completed within 6 months of the notice of the availability of a final restoration plan. Selected and approved projects will have the appropriate permits in place and be ready to be implemented under Phase II within 2 years of the completion of Phase I. If the time limits are expired, the remaining funds will be reallocated to other *Tenyo Maru* projects identified in the plan.

Estimated budget from Tenyo Maru funds:

Project development, implementation, and monitoring - \$2,500,000

(Break out costs: 6 mo. feasibility study for the river silt reduction component = \$ 60,000; monitoring costs for marbled murrelet nesting habitat protection = \$10,000)

5.0 ENVIRONMENTAL CONSEQUENCES

To restore resources lost as a result of the oil spill, the Trustees examined a variety of restoration alternatives. These included alternatives: (A) no action and natural recovery, (B) **population-**focused restoration, (C) habitat-focused restoration, and (D) integrative restoration. The integrative restoration approach was the preferred alternative selected by the Trustees. The *Tenyo Maru* Trustees intend to avoid or reduce negative impacts to existing natural resources and services to the greatest extent possible. However, the Trustees could undertake actions that may have short or long term effects upon existing habitats or non-injured species. Project specific environmental consequences for each alternative and associated projects are provided in Section 3. This section addresses the potential overall cumulative, direct, and indirect impacts, and other factors to be considered in both the OPA and the NEPA regulations.

The *Tenyo Maru* Trustees believe that the projects selected in this restoration program will not cause significant negative impacts to natural resources or the services they provide. Further, the Trustees do not believe the proposed projects will adversely affect the quality of the human environment in ways deemed “significant.”

Cumulative Impacts: Since the proposed projects are primarily designed to restore degraded habitats and improve recovery of injured natural resources, the cumulative environmental consequences will primarily be beneficial. These cumulative impacts include long-term restoration of the condition and functioning elements of the injured ecosystem by increasing the number of individual **seabirds** that attempt to reproduce, the recruitment of **seabird** and kelp populations, and the amount and condition of protected habitats. Both project and NEPA monitoring of projects funded under the Tenyo Maru restoration fund will verify that cumulative impacts will be beneficial rather than adverse. Any cumulative adverse effects on an area or other area program, plan, or regulatory regime from a proposed project, will result in the project being redesigned or abandoned.

Indirect Impacts: Environmental consequences would not be limited to the project location. Indirect beneficial impacts would also occur throughout populations and habitats in Western Washington and Oregon. Cumulative impacts at the project locations, and in the surrounding area, are expected to increase populations of **seabirds** and kelp, provide improved habitats for a variety of fish and wildlife, and provide a greater understanding of human interaction with natural resources. This alternative could indirectly benefit a variety of federally **threatened and endangered species** and Washington State listed sensitive species by providing nesting, feeding, resting, rearing and other forms of habitats utilized during the lives of these species.

Direct Impacts: Providing improved habitats, improving the survivability of **seabirds** of all age classes, and enhancing natural **seabird** and kelp recruitment may aid in replenishing the resources injured in the *Tenyo Maru* oil spill. The proposed restoration projects may increase the survivability of **seabirds** and kelp not killed in the oil spill and will aid in replenishing the natural population by increasing productivity levels.

Overall, this alternative should enhance water *andsediment quality* and the functionality of ecosystems. However, some brief impacts from the proposed actions may include short-term disturbances from *noise and air pollutants* from construction activities; short-term water and sediment quality impacts; temporary disruption of animal migrations, breeding and nesting; short-term disturbances of existing plant communities; and temporary disturbances of ecological processes while the restored system reaches maturity.

It is the Trustees' intention to keep *construction* categorized as very "minor." The term of any construction projects (e.g., sediment control activity, forest manipulation, and the posting of signs) is anticipated to be very short, generally from two to four weeks and may qualify as a categorical exclusion to NEPA under DOI Department Manual 5 16 DM6, Appendix I, but will be reviewed to ensure that both federal agencies under this settlement concur in the appropriate environmental document.

Projects that involve short-term construction activities could generate noise from machinery and equipment. If specific construction projects are to be conducted in "noise sensitive" areas, project specific environmental assessments will be conducted and include the extent of any impact. The proposed restoration projects could cause an increase in noise from resident and migrating birds, which would be a potential long-term impact. As habitat is restored or improved, birds and other wildlife should become more plentiful in the project area. However, the areas surrounding the proposed projects areas are primarily water or wilderness areas. It is not anticipated that any significant *noise impacts* would result from the projects proposed by the Trustee Committee.

Implementation of the proposed projects should result in no significant impact to *water quality*. Habitat modification activities in or next to streams or rivers, could have short-term water quality impacts through temporary increases in sedimentation and turbidity. Any impacts resulting from restoration construction activities will be mitigated by using techniques such as the use of sediment curtains or other technologies designed to reduce sediment transport. Any construction equipment would be monitored to ensure diesel, gas, or oils are not released into waters at or next to the project site. The Committee believes that potential restoration activities would result in insignificant effects to this resource.

No long-term adverse effects to *sediment quality, soils, or geologic conditions* are anticipated under this restoration plan. The Trustee Committee does not anticipate any temporary or permanent *visual impacts* from any of the proposed projects and none of the proposed restoration actions should have an impact on *energy consumption*. No proposed projects would directly or indirectly affect *wetlands or flood plain areas*. Furthermore, the *Tenyo Maru* Trustees do not believe any of the proposed restoration projects would have a significant impact on the *coastal zone*, but specific projects in the coastal zone will undergo the appropriate coastal zone consistency review requirements.

The project sites are wilderness areas, areas surrounded by water or areas under water. Restoration work should not have any *social or economic impacts* upon the neighborhoods or community cohesion for various groups from proposed projects. Property values should not be

decreased, nor will there be any separation of the communities' residents from community facilities. Implementing Phase V of the **Seabird** By-catch Reduction in Coastal Net Fisheries of Washington State (Section 3.2.2.4) could lead to minor adverse effects on commercial and recreational fishing opportunities in the area. However, this project is designed to engineer and carry out a strategy that has little or no impact on the net fishery so any adverse impact would be minimal. Due to the nature and purpose of the Restoration Plan, there are no anticipated human relocation issues.

General **land use patterns** and **aesthetic qualities** should not be adversely affected under the preferred alternative for the following reasons. Open space and recreational uses are scattered throughout the study area and forested areas. Land ownership may be affected if direct land purchase is required, however this should not affect the overall balance of ownership patterns within the study areas. Land management practices will not be affected since the pertinent local plans and ordinances, and state planning regulations, encourages the preservation and restoration of the area's vital natural resources.

Public access to natural resources could be affected. The proposed public education project includes interpretive signs that should make the public more aware of the environment that they are viewing. Subsequently, this could draw more frequent human visitors, however, the number is anticipated to be insignificant. The signs are intended to educate those present, to increase awareness, and not to attract. It is the intent of the Trustees to balance the goals of public access and habitat restoration whenever possible. Recreation and tourism will not be negatively affected by the proposed projects, however, the public may be more educated on how to avoid impacts to **seabirds** while recreating or touring on or near islands that support **seabird** colonies.

Specific restoration sites and their perceived potential impact upon **water-oriented commerce** would be addressed on a site-by-site basis, as would be their eligibility for the **National Historic Register of Historic Places**. Since all site-specific projects would be designed to identify historic properties, potential effects on **tribal treaties** and **archaeological preservation** and mitigate for any potential impacts, it is not anticipated that historic properties would be affected under any of the proposed actions. Information on prime and **unique agricultural lands** will be solicited from the United States Department of Agriculture upon selection of specific *Tenyo Maru* restoration sites.

No significant negative impacts to **threatened or endangered species** are expected to result from the integrated approach. If actions under this alternative are determined to adversely affect federal or state-listed species, the project would be redesigned, relocated or abandoned. The chance of any *Tenyo Maru* restoration project having a negative impact **on fish and wildlife** is insignificant, limited only to the duration of construction activities. The anticipated overall environmental effect on fish and wildlife is to restore and maintain species diversity and abundance in Washington and Oregon.

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Appendix A: Summary of public comments

The following issues, concerns and suggestions were presented at the informal *Tenyo Maru* Trustee Committee's workshops held in Port Angeles on November **14**, 1995 and in Seattle on November **16**, 1995. Comments are summarized below and are categorized according to subject. A response is provided.

Participants in the Restoration Planning Process

Comments:

- Why is a meeting being held in Seattle? Why are people outside the Olympic Peninsula involved?
- Why does Seattle have any interest in how money is spent?
- Clallam County is a charter county with citizen control of its money, projects and plans. Clallam County people should be in on how money is spent.
- Why are there no Clallam County representatives on the *Tenyo Maru* Trustee Committee?

Response:

Natural resources injured in the *Tenyo Maru* spill are national and state public resources. Review and comment on the draft and final programmatic restoration plan is open to all interested persons. Natural resource trustees are defined under NRDA regulations as those officials of the federal and state governments, of Indian tribes, and of foreign governments, designated under 33 U.S.C. 2706(b) of OPA. The *Tenyo Maru* consent decree and MOU identifies the specific applicable state, federal, and Tribal Trustee Committee members responsible for the restoration implementation for the *Tenyo Maru* oil spill. Information on public involvement in the process is presented in Section 1.5 Public Involvement and Plan Implementation.

Consent Decree

Comments:

- Would like to see copies of the consent decree
- Why is the Consent Decree/scoping document bound to just **seabirds** and kelp?
- Resources recover on their own. How was liable party able to determine how consent decree money to be spent?

Response:

Copies of the *Tenyo Maru* consent decree and MOA are available upon request from the Trustee Committee. The consent decree is a signed legal document that designates the expenditure of the funds. Prior to settlement of the spill, injuries to natural resources were documented and the information was provided to the parties responsible for the spill. **Seabirds** and kelp were the primary documented injuries. The spill was settled under the Oil Pollution Act of 1990. Acceptance criteria to determine injury is defined under DOI regulations in **43** CFR Subtitle A, Part 11.

Public Notification

Comment:

- How was the public notified regarding information concerning the consent decree? Local radio does not have enough range to broadcast to everyone in the county.

Response:

The Consent Decree was a settlement negotiated between the responsible parties, the United States of America, the State of Washington, and the Makah Indian Tribe. The public was notified through a Federal Register notice of the pending consent decree before it was entered into the court.

Changing the Consent Decree

Comment:

- Can the Federal Court be petitioned to allow consent decree funds to be spent on other projects such fisheries? Can the judgment be revisited so it can be changed? What would it take?

Response:

The Consent Decree was made available to the public through a Federal Register notice of a **30-day** comment period. This was the public's opportunity to review and comment on the settlement agreement.

Return Money

Comment:

- Why **not** study to find impacts of the spill. **If** no impact can be found, give the money back.

Response:

Natural resource injuries were documented following the spill. Therefore, settlement dollars are necessary to restore the natural resources that were injured.

Give Money to Tribes

Comment

- Give a portion of the consent decree money to the Makah Tribe, a portion to the Quillayute Tribe and earmark the rest for fisheries.

Response:

The Makah Tribe is a member of the Trustee Committee and a participant in the settlement. Therefore, they are a party in determining how the settlement dollars will be used in restoring the injured resources from the spill. The Quillayute Tribe has had an opportunity to participate through the DOI Bureau of Indian Affairs and may offer input during the public comment period.

Restoration Fund Dollars and Management

Comments:

- Save fund money and spend the interest and not the principal.
- A sustainable fund should be set up for ongoing projects, research, studies and restoration.
- Need to determine way to resupply funds so consent decree money won't be totally consumed.
- **How** much money is available from interest on \$5.2 million restoration fund?
- Is **\$5.2** million a "generous" amount?

Response:

The \$5.2 million restoration fund is generating interest in a court registry account. Depending on plans for expending funds in the near future, the restoration dollars can be managed in different interest-bearing accounts that will determine the amount of earned interest. Restoration funds can be managed over the long-term to insure the success of restoration projects. The settlement amount was deemed appropriate for restoring injured natural resources by all parties at the time of settlement.

Length of Time

Comment:

- Why has this project taken so long? The spill occurred in 1991 — what's been going on since then?

Response:

Negotiating natural resource damage settlements and subsequent restoration actions can often be time intensive and a complicated process. The process to develop the *Tenyo Maru* restoration plan involved the assessment of injuries, negotiations for settlement, developing a scoping document for public review and comment, conducting pilot projects to determine the most effective restoration strategies, and developing and writing a restoration plan.

Oil on the Vessel

Comments:

- The absolute volume of oil contained in the *Tenyo Maru* is known. Why is there a discrepancy between volume on the vessel and the amount reportedly spilled?
- The guilty party should be responsible for getting oil out of the sunken vessel to avoid more spills.

Responses:

Only part of the oil on the vessel was spilled upon impact. Oil continued to leak from the vessel for more than a month following the spill and measuring the total amount of oil released from the vessel was not possible. The vessel sank in 90 fathoms of water and continued to roll, presenting hazardous conditions for investigating the vessel.

Injured Resources Addressed

Comments:

- What was the impact of the spill on area sea otters?
- What were the bird species collected as result of the spill? Were any fisheries closed as result of the spill?
- How much effect did the oil have on bait fish/salmon and other species that dwell in the kelp beds?
- Have any other resources besides seabirds and kelp been identified as being damaged?
- What theories have been applied to assess damages from the spill?
- Were there studies to determine area resources pre spill vs. post spill?

- What about studies/injuries to anadromous fish? (e.g., cutthroat, smelt, candlefish, salmon, etc.)
- How were fisheries resources impacted by the spill?
- How has the definition of “injury” been applied? How were injuries documented? What has been the criterion for determining injuries?

Response:

Information on injuries to natural resources is presented in Section 1.2 Fish and Wildlife Resources and Natural Resource Injury of the draft programmatic restoration plan. NRDA regulations dictate that the trustees use settlement dollars to restore natural resources injured from the release of oil or hazardous substances. Acceptance criteria to determine injury is defined under DOC regulations in **15** CFR Part 990 and DOI regulations in 43 CFR Subtitle A, Part 11.

Injuries to Urchins

Comments:

- What were effects of the spill on predators of kelp, such as sea urchins? How closely are urchin fisheries monitored to determine population and/or damages?

Response:

The effect of the spill on sea urchins was not investigated. Urchin fisheries are monitored as a commercial fishery..

Kelp

Comments:

- Were there aerial photos taken before/after of area kelp beds? How did oil impact kelp?

Response: Information on injuries to kelp is addressed in Section 1.2 Fish and Wildlife Resources and Natural Resource Injury, of the restoration plan.

Restoration of Fish

Comments:

- Impacts on fish are a given. Will spill impacts on fisheries be addressed?
- Aerial extent of the spill was broad. Fish eggs had to have been affected/injured.

Response:

NRDA regulations dictate that the Trustees use settlement dollars to restore natural resources injured from the release of oil or hazardous substances. Acceptance criteria to determine injury is defined under DOC regulation in CFR 15 Part **990** and DOI regulations in 43 CFR Subtitle A, Part 11. Spill-related natural resource injuries were documented primarily for marine birds, and secondarily for kelp. Injuries to fish, shellfish, and the fisheries resource, were not documented as part of the damage assessment process. Therefore, fish restoration is not directly addressed in this restoration plan, however, many of the projects proposed will have indirect benefit to the fishery resource. Information on injuries to natural resources is presented in Section 1.2 Fish and Wildlife Resources and Natural Resource Injury of the draft restoration plan.

Natural Restoration

Comments:

- It has been four years since the spill. To what extent has natural restoration occurred?
- What has been done regarding studies/monitoring of resources and wildlife species during the last four years since the spill? Have they been recovering without assistance? How much has been spent on these studies to date?

Response:

Some of the interest generated from the *Tenyo Maru* restoration fund (a total of \$200,840.35 to date) was used to conduct pilot projects necessary to collect data that would be irretrievably lost and was necessary for the preparation of an efficient and successful restoration plan. These pilot projects included: (1) aerial surveys of common murre colonies in Washington and Oregon, (2) Common murre productivity and reproductive success on Tatoosh Island, (3) Seabird-prey base study, (4) at-sea distribution assessment of common murres and marbled murrelets, (5) aerial surveys of kelp distribution, and (6) and population genetics analyses of common murre colonies in Washington and Oregon.

Impacts of Cleanup/Restoration

Comments:

- Could cleanup/restoration cause more harm than the spill?

Response:

Cleanup from oil spills can cause harm to the environment, however, hazardous cleanup procedures were not implemented following the *Tenyo Maru* oil spill. The goal of a restoration plan is to provide benefits to injured natural resources.

Studies Versus Restoration

Comments:

- Can money be used for research?
- How much should be spent on restoration?
- Money in trust could be squandered on studies and not on real restoration. The goal should be on healing environmental food web.
- Get productive, start restoration projects now. Studies should be aimed at practical needs. The usefulness of studies is questionable.
- Confusion exists — can decree moneys be used for **studies** going on already? Do they all have to be sponsored by state/federal government?
- Can money be used to beef up current studies or projects?

Response:

NRDA regulations dictate that the trustees use settlement dollars to restore natural resources injured from the release of oil or hazardous substances and that the successes of restoration projects be monitored to document restoration of injured natural resources. All projects proposed in the *Tenyo Maru* Draft Environmental Assessment and Restoration Plan have the goal of restoring injured natural resources. Chapter 1 provides information on the legal guidance for expenditure of restoration funds.

Restoration Plan Project Proposals

Comments:

- What are the big “wish list” **ideas** for restoration projects?
- What ideas have been brought forth already?
- What are the categories for the distribution of funds?
- What are the bird species being targeted?
- Keep political agendas out of studies. We remember the spotted owl studies.
- Are juvenile fish the only focus as a food source for seabirds?
- Money should be spent on restoring specific and/or selected watersheds.
- Focus on restoring the kelp bed at the mouth of the Quillayute River.

Draft of January 20, 1999

- Give part of the money to the Snyder Creek enhancement program on **Soleduck** River.
- Can Consent Decree funds be used for restoring and/or cleaning up environmental niches?
- Is there any thought for the money to be spent on environmental education? A good project would be to document the historical background of lessons learned from the spill.
- One possible restoration project is to study the relationship between human impacts on bait fish and **seabird** populations.
- Can money be used to study effects of hazardous materials/chronic pollution on **seabird** populations?
- Create artificial crevices for **seabird** nesting, such as Tatoosh Island.

Response:

The *Tenyo Maru* Trustee Committee has selected a preferred alternative that includes several individual restoration project proposals. They are described in Section **3.0**.

Land Purchases

Comments:

- Are any inventories being done regarding possible land parcels for purchase?
- Trustees should work through the state Department of Natural Resources' Habitat Conservation Program process to save money and encourage better integration of restoration.
- Purchase easements.
- What type of land would be purchased? Private, public and/or tribal?
- Restoration as a science is in its infancy. Trustees should invest in conservative measures and purchasing land may be better than other measures.
- Cancel idea of land purchase.

Response:

Restoration dollars cannot be expended before the draft restoration plan has been approved. Therefore, a formal identification of available land has not been initiated. Any available land would be considered that meets acquisition/protection criteria.

Gillnet Modifications

Comment:

- What is meant by **gillnet** modification and its relation to tribal fishing rights?
- Weren't more murre killed in the net fisheries every year than perished in the spill?

Response:

Section 3.2.4 describes a restoration project proposal that intends to reduce **seabird** by-catch in coastal net fisheries.

Spill Prevention

Comments:

- Money should be spent on spill/pollution prevention. What about issues such as recovery/treatment center studies, where are we now?
- Spend the money on preventing the cause of the **Tenyo Maru** spill.
- What is restoration? Restoration definition is too narrow. Focus on preventive measures.
- Use money around marinas to reduce/prevent pollution. Get away from argument about certain resources.
- You can only study something so long. Spend money on something productive. Spend money on facilities.
- Can radar system improvements be funded by consent decree money?
- Spend money on vessel pilots.
- Use money to form quick spill response teams similar to the National Guard. Make sure it is composed of local residents.
- Put money in trust for future spills.
- Resort owners should get the money.
- Spend money on tideland protection in case of future spills.
- Selling prevention projects to liable parties could be **difficult**. Sell liable parties on the idea that preventive measures are used for restoring community confidence.
- Spend money on developing a rapid response team at Neah Bay to respond to oil spills.

Draft of January 20, 1999

- *Use* part of money to maintain response equipment in area (Neah Bay).
- Has any money been earmarked for prevention?
- Reduce human impacts — money should go to resorts in area for pollution prevention.
- Put \$2 million into Clallam County treasury and let the county determine how the money is spent.
- One project could be to do research regarding saving rescued birds. Many die even when they are rescued. Can the survival rate be increased?

Response:

NRDA regulations dictate that the trustees use settlement dollars to restore natural resources injured from the release of oil or hazardous substances. Section 3.2.2 describes a restoration project proposal that improves oiled wildlife rehabilitation in Western Washington.

Matching Dollars

Comments:

- Aren't we being cheated if the \$5.2 million is spent only on seabirds/kelp? We should use the money to leverage matching dollars from other federal/state agencies to increase the fund.

Responses:

NRDA regulations dictate that the trustees use settlement dollars to restore natural resources injured from the release of oil or hazardous substances. Consequently the *Tenyo Maru* Draft Environmental Assessment and Restoration Plan addresses the restoration of injured natural resources. As identified in Section 3 of the draft Plan, many restoration project proposals in this Plan pursue matching dollars from other sources to conduct the project.

Completion of Restoration Projects

Comments:

- How will we know when restoration is complete?

Response:

Project goal monitoring is provided for each individual project proposal discussed in Section 3. Section 6 describes the overall process of measuring the success of the restoration plan.

Restoration Project Implementation

Comments:

- Schedule a follow-up meeting when the trustees are ready to introduce a request for proposal (RFP) for projects.
- Who does peer review?
- What is the time line for submitting proposals? What is the process?
- Who would be lead agency for letting restoration projects? Who has ultimate responsibility? Which agency oversees contract administration?

Response:

Restoration project proposals are provided in Section 3 of this draft Plan for public review and comment.

Other Oil Spills

Comments:

- What has been going on with other counties impacted by oil? Have other meetings been scheduled to get their input?
- What was learned from *Exxon Valdez* spill?
- How does *Tenyo Maru* settlement relate to 1988 *Nestucca* settlement for restoration projects? Was a seabird baseline/population developed?

Response:

The Trustees have consulted with biologists designing and carrying out restoration plans for other oil and hazardous spills. Information learned from the *Exxon Valdez* (Alaska) and the *Apex Houston* (California) spills have been of particular interest since they are involved with seabird restoration. The gillnet modification portion of the *Nestucca* settlement has been completed. Information learned from that study was used in designing the *Tenyo Maru* project proposal discussed in Section 3.2.4. The public education project proposal discussed in Section 3.2.3 expands on the educational component of the *Nestucca* Restoration Plan. Developing a seabird population baseline was not funded as a *Nestucca* activity.

Common Murre and other Seabird Biology

Comments:

Draft of January 20, 1999

- What do murres/marbled murrelets eat? Do they predate on juvenile steelhead and other fish? If you increase the number of juvenile steelhead in the area, the food supply for **seabirds** will also increase.
- Where was baseline data obtained? How were trends determined regarding seabirds?
- What are the major predators on common murres?
- What major predators of **seabird** eggs and chicks?
- Are murres breeding now on Tatoosh Island?
- Were murres finished breeding when spill occurred? Were they nesting?

Responses:

Information and references on marine birds are discussed in Section 3.2.1 of the draft restoration plan.

Predator/Pest Control

Comments:

- What is meant by nonnative pest removal?
- Do seals/sea lions count as “predators?”
- What is meant by “predator pest management?”

Responses:

Nonnative predator/pest removal would be removing exotic (introduced to the area by humans) species from a location to help a native species restore. An example would be the removal of introduced, non-native foxes from a **seabird** nesting island and eliminate their preying upon seabirds.

Activities on Tatoosh Island

Comments:

- What are the current human activities on Tatoosh Island?
- Keep U.S. Coast Guard helicopters off Tatoosh Island.

Response:

Tatoosh Island is part of the Makah Tribal Lands. All access to the islands is regulated by the Makah Tribe. The restoration project proposal discussed in Section 3.2.3 addresses

disturbance issues from human activities and aircraft on Tatoosh Island and for coastal National Wildlife Refuge Islands in Oregon. Disturbances of coastal National Wildlife Refuge islands in Washington are addressed in the *Nestucca* Restoration Plan.

Makah Cultural Resources Settlement

Comments:

- What were the cultural damages to the Makah Tribe and how much money was received?

Response:

The Makah Tribe is a co-trustee for the *Tenyo Maru* NRDA and restoration.

Appendix B: Coordination with Other Programs, Plans, and Regulatory Authorities

B.1 Overview

Two major federal laws guiding the restoration of the injured natural resources and services from the Tenyo Maru oil spill are OPA and NEPA. OPA and its regulations provide the basic framework for natural resource damage assessment and restoration. NEPA sets forth a specific process of impact analysis and public review. In addition, the Trustees must comply with other applicable laws, regulations and policies at the federal, state and local levels. The potentially relevant laws, regulations and policies are set forth below.

In addition to laws and regulations, the Trustees must consider relevant environment or economic programs or plans that are ongoing or planned in or near the affected environment. The Trustees must ensure that their proposed restoration activities neither impede nor duplicate such programs or plans. By coordinating restoration with other relevant programs and plans, the Trustees can enhance the overall effort to improve the environment.

B.2 Key Statutes, Regulations and Policies

Oil Pollution Act of 1990 (OPA), 33 U.S.C. §§ 2701, et seq.: 15 CFR Part 990

OPA establishes a liability regime for oil spills which injure or are likely to injure natural resources and/or the services that those resources provide to the ecosystem or humans. Federal and state agencies and Indian tribes act as trustees on behalf of the public to assess the injuries, scale restoration to compensate for those injuries and implement restoration. Section 1006(e)(1) of OPA (33 U.S.C. § 2706 (e)(1)) requires the President, acting through the Under Secretary of Commerce for Oceans and Atmosphere, (NOAA) to promulgate regulations for the assessment of natural resource damages resulting from a discharge or substantial threat of a discharge of oil. Assessments are intended to provide the basis for restoring, replacing, rehabilitating, and acquiring the equivalent of injured natural resources and services.

National Environmental Policy Act (NEPA), 42 U.S.C. §§ 4321, et seq. 40 CFR Parts 1500-1508

Congress enacted NEPA in 1969 to establish a national policy for the protection of the environment. NEPA applies to federal agency actions that affect the human environment. NEPA established the Council on Environmental Quality (CEQ) to advise the President and to carry out certain other responsibilities relating to implementation of NEPA by federal agencies. Pursuant to Presidential Executive Order, federal agencies are obligated to comply with the NEPA regulations adopted by the CEQ. These regulations outline the responsibilities of federal agencies under NEPA and provide specific procedures for preparing environmental documentation to comply with NEPA. NEPA requires that an Environmental Assessment (EA) be prepared in order to determine whether the proposed restoration actions will have a significant effect on the quality of the human environment.

Generally, when it is uncertain whether an action will have a significant effect, federal agencies will begin the NEPA planning process by preparing an EA. The EA may undergo a public review and comment period. Federal agencies may then review the comments and make a determination.

Depending on whether an impact is considered significant, an environmental impact statement (EIS) or a finding of no significance (FONSI) will be issued.

The Trustees have integrated this restoration plan with the NEPA process to comply with those requirements. This integrated process allows the Trustees to meet the public involvement requirements of OPA and NEPA concurrently. This **DRP/EA** is intended to accomplish partial NEPA compliance by:

- summarizing the current environmental setting;
- describing the purpose and need for restoration action;
- identifying alternative actions;
- assessing the preferred actions' environmental consequences; and,
- summarizing opportunities for public participation in the decision process.

Project-specific NEPA documents will need to be prepared for those proposed restoration projects not already analyzed in an environment assessment or environmental impact statement.

Park System Resource Protection Act, 16 U.S.C. § 19jj

Public Law 101-337, Park System Resource Protection Act (16 U.S.C. 19jj), requires the Secretary of the Interior to assess and monitor injuries to park system resources. The Act specifically allows the Secretary of the Interior to recover response costs and damages from the responsible party causing the destruction, loss of or injury to park system resources. This Act provides that any monies recovered by the NPS may be used to reimburse the costs of response and damage assessment and to restore, replace or acquire the equivalent of the injured resources.

Clean Water Act (CWA) (Federal Water Pollution Control Act), 33 U.S.C. §§ 1251, et seq.

The CWA is the principal law governing pollution control and water quality of the nation's waterways. Section 404 of the law authorizes a permit program for the disposal of dredged or fill material into navigable waters. The Army Corps of Engineers (Corps) administers the program. In general, restoration projects which move significant amounts of material into or out of waters or wetlands -- for example, hydrologic restoration of marshes -- require 404 permits.

Under section 401 of the CWA, restoration projects that involve discharge or fill to wetlands or navigable waters must obtain certification of compliance with state water quality standards. Generally, restoration projects with minor wetlands impacts (i-e., a project covered by a Corps general permit) do not require 401 certification, while projects with potentially large or cumulative impacts do.

Coastal Zone Management Act (CZMA), 16 U.S.C. §§ 1451, et seq. 15 CFR Part 923

The goal of the CZMA is to preserve, protect, develop and, where possible, restore and enhance the nation's coastal resources. The federal government provides grants to states with **federally-**approved coastal management programs. The State of Washington has a federally-approved program. Section 1456 of the CZMA requires that any federal action inside or outside of the coastal zone that affects any land or water use or natural resources of the coastal zone shall be consistent, to the maximum extent practicable, with the enforceable policies of approved State management programs. It states that no federal license or permit may be granted without giving

the State the opportunity to concur that the project is consistent with the State's coastal policies. The regulations outline the consistency procedures.

To comply with the **CZMA**, the Trustees intend to seek the concurrence of the State of Washington that their preferred projects are consistent to the maximum extent practicable with the enforceable policies of the state coastal program.

Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), 42 U.S.C. §§ 9601, et seq.

CERCLA provides the basic legal framework for clean up and restoration of the nation's hazardous substances sites. Generally, parties responsible for contamination of sites and the current owners or operators of contaminated sites are liable for the cost of clean up and restoration. CERCLA establishes a hazard ranking system for assessing the nation's contaminated sites with the most contaminated sites being placed on the National Priorities List (NPL).

To the extent that restoration projects are proposed for areas containing hazardous substances, the Trustees will avoid exacerbating any potential risk posed by such substances and will undertake no actions which might constitute "arrangement for disposal of hazardous substances." At this time, the Trustees are not aware of any potential hazardous substance problem associated with the areas where proposed restoration projects will occur.

Endangered Species Act (ESA), 16 U.S.C. §§ 1531, et seq.

The ESA directs all federal agencies to conserve endangered and threatened species and their habitats and encourages such agencies to utilize their authorities to further these purposes. Under the Act, the Department of Commerce through NOAA and the Department of the Interior through the USFWS publish lists of endangered and threatened species. Section 7 of the Act requires that federal agencies consult with these departments to minimize the effects of federal actions on endangered and threatened species. Prior to implementation of any project potentially affecting an endangered or threatened species, the Trustees would conduct Section 7 consultations.

Fish and Wildlife Coordination Act (FWCA), 16 U.S.C. §§ 661, et seq.

The FWCA requires that federal agencies consult with the U.S. Fish and Wildlife Services, the National Marine Fisheries Service and State wildlife agencies for activities that affect, control or modify waters of any stream or bodies of water, in order to minimize the adverse impacts of such actions on fish and wildlife resources and habitat. This consultation is generally incorporated into the process of complying with Section 404 of the Clean Water Act, NEPA or other federal permit, license or review requirements.

Rivers and Harbors Act, 33 U.S.C. §§ 401, et seq.

The Rivers and Harbors Act regulates development and use of the nation's navigable waterways. Section 10 of the Act prohibits unauthorized obstruction or alteration of navigable waters and vests the Corps with authority to regulate discharges of fill and other materials into such waters. Restoration actions that require Section 404 Clean Water Act permits are likely also to require permits under Section 10 of the Rivers and Harbors Act. However, a single permit usually serves

for both. Therefore, the Trustees can ensure compliance with the Rivers and Harbors Act through the same mechanism.

Executive Order 12898 - Environmental Justice

On February 11, 1994, President Clinton issued Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations. This Executive Order requires each federal agency to identify and address, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies and activities on minority and low income populations. EPA and the Council on Environmental Quality (CEQ) have emphasized the importance of incorporating environmental justice review in the analyses conducted by federal agencies under NEPA and of developing mitigation measures that avoid disproportionate environmental effects on minority and low-income populations. The Trustees have concluded that there are no low income or ethnic minority communities that would be adversely affected by the proposed restoration activities.

Executive Order 11988 -- Construction in Flood plains

This 1977 Executive Order directs federal agencies to avoid to the extent possible the long and short term adverse impacts associated with the occupancy and modification of Flood plains and to avoid direct or indirect support of development in Flood plains wherever there is a practicable alternative. Each agency is responsible for evaluating the potential effects of any action it may take in a flood plain.

Before taking an action, the federal agency must determine whether the proposed action will occur in a flood plain. For major federal actions significantly affecting the quality of the human environment, the evaluation will be included in the agency's NEPA compliance document(s). The agency must consider alternatives to avoid adverse effects and incompatible development in Flood plains. **If the** only practicable alternative requires siting in a flood plain, the agency must: (1) design or modify the action to minimize potential harm; and, (2) prepare and circulate a notice containing an explanation of why the action is proposed to be located in the flood plain.

Model Toxics Control Act (MTCA), Ch. 70.105D RCW (1989) and Ch. 173-340 WAC (1992)

MTCA, Washington's toxic cleanup law, mandates that site cleanups protect the state's citizens and the environment. The regulations established cleanup standards, which provide a uniform, statewide approach to cleanup that can be applied on a site-by-site basis; and requirements for cleanup actions, which involve evaluating the best methodology to achieve cleanup standards at a site.

State Environmental Policy Act (SEPA), Ch. 43 RCW

Adopted in 1971, and revised several times, SEPA requires state agencies and local governments to analyze proposed projects and plans for potentially significant impacts to the environment. Regulations implementing SEPA and providing guidance for state and local governments have been adopted (CH. 197-11 WAC). Specific resource areas which must be considered under SEPA include earth, air, water, vegetation, wildlife, public health, and shorelines. The SEPA review process may be initiated at the local government level through the development

application review procedures. Local regulations identifying and protecting critical or sensitive environmental areas help ensure compliance with SEPA regulations. State agencies also prepare documents in response to proposals for state agency action.

B.3 Other Potentially Applicable Laws and Regulations

This section lists other laws that potentially affect any proposed restoration activities. The statutes or their implementing regulations may require permits from federal or state permitting authorities.

Archaeological Resources Protection Act, **16 U. S.C. §§ 470, *et seq.***

Clean Air Act, 42 U.S.C. §§ 7401, *et seq.*

Marine Mammal Protection Act, 16 U. S.C. §§ 1361, *et seq.*

Migratory Bird Treaty Act, 16 U.S.C. §§ 703, *et seq.*

National Historic Preservation Act, 16 U. S.C. 470, *et seq.*

National Park Act of August 19, 1916 (Organic Act), 16 U.S.C. §§ 1, *et seq.*

Olympic Coast National Marine Sanctuary, 15 CFR Part 922